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ABSTRACT

This report studies the role of teaching in the faculty reward structure by examining the relationship between faculty activities (teaching and instruction, research and scholarship, administration, public service) and compensation. The study examined the implicit emphases given by academic institutions to various faculty activities. The data presented are from a national survey of 424 colleges and universities, stratified by Carnegie type; and 8,383 full- and part-time faculty representing a response rate of 76%. Key findings indicated: (1) seniority and male gender were positively related to compensation; and (2) teaching was a negative factor in compensation whereas research was positively related to compensation. These patterns held true overall and for each type of institution. Appendices include the survey questionnaire; and various compensation breakdowns by academic and demographic characteristics, teaching activities and workload, research activities and workload, by administration and service, and by faculty demographics and type of institution. (Contains 57 references.) (GLR)

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Teaching and the Faculty Reward Structure:

Relationships between Faculty Activities and Compensation

National Center for Postsecondary Teaching, Learning and Assessment

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Teaching and the Faculty Reward Structure

The social and economic contributions which faculty make to society through teaching, research, and service historically have had both demonstrable value and cultural acceptance. Viewed as a "social good," investment in higher education has been fundamental to the maintenance of the American social fabric (Bowen, 1977; Leslie & Brinkman, 1988, pp. 80-82). This support is now eroding. The role of faculty as educators, training citizens to participate in the workforce, is no longer viewed by some critics as sufficient, particularly in a global economy where more direct involvement in technology transfer may be needed (Chmura, Henton, & Melville, 1988; Tornatzky & Fleisher, 1990, pp. 236-257). The recent overhead expenditure fiascos at leading research universities also have tarnished the image of higher education, raising questions about the use of funds received from public and private sources. In the name of accountability, some state officials have asked (or in some cases required) colleges and universities to demonstrate the productivity of their faculty (Jacobsen, 1992).

Reacting to these external criticisms, the American Association of Higher Education set "Reclaiming the Public Trust" as its theme for the 1992 annual conference Boyer (1987) argued that renewing investment in undergraduate education is paramount to restoring this trust, echoing the recommendations of the Study Group on the Conditions of Excellence in American Higher Education (1984) which focused on encouraging more active student and faculty involvement in instruction.

These criticisms and recommended responses raise fundamental questions about the purposes of academe and their relative importance, which have consequences for the individuals charged with carrying out academic activities, the faculty. In particular, any reformation or clarification of the purposes of academe requires examination of faculty reward structures, and the values embedded in them about the relative importance of teaching, research and scholarship, and service.

This report focuses on the role of teaching in the faculty reward structure. Public concern about the cost of higher education and the value received for expensive tuition, anecdotes about attending college to work with renowned professors only to be taught by graduate students, and debates within the academy about curricular content and whether or not faculty have the time to spend on curricular reform add to the lore about the limited role of teaching in the faculty reward structure.

Most of the research to date on this topic has been mythical or at best attitudinal in content. Studies of the reward structure typically focus on promotion and tenure, and on faculty and administrator attitudes about the relative importance of teaching and research in promotion and tenure (e.g., Carnegie, 1989). Although administrators from all types of institutions (including research universities) claim that quality of teaching is among the top three criteria for achieving tenure (Russell, Cox, & Boismier, 1990, pp. 12-13), Bowen & Schuster (1986), Cook, Kinnetz, and Owens-Misner (1990), and Peters and Mayfield (1982) found that faculty perceived their rewards were dependent on research, not teaching, including faculty from institutions with a strong emphasis historically on teaching.

Promotion and tenure, however, comprise only one aspect of the faculty reward structure. Promotion and tenure happen at most three times during a career: promotion to associate professor from assistant professor, tenure (which often is combined with promotion to associate professor), and promotion to full professor. Further, the academic culture surrounding the promotion and tenure process, including the complex sharing of responsibilities between peers (faculty), who make the initial decision in most cases, and administrators, whose authority in promotion and tenure varies by institution (Russell, Cox, & Boismier, 1990), makes remediation of perceived inequities difficult. These complexities make it unclear whether faculty and administrators interested in revitalizing the role of teaching in academe focus on administrative leadership, faculty cultures, the hiring process, or a combined approach.

In contrast, compensation is an often ignored part of research on the reward structure. Unlike promotion and tenure, compensation is an annual "reward," reflecting at least in part the value placed by the institution or department on the work of individual faculty. Although studies of compensation abound, the focus has been descriptive (e.g., have faculty salaries kept pace with inflation) (American Association of University Professors, 1989; Armey, 1983; California State Postsecondary Education Commission, 1989; College and University Personnel Association, 1986a, 1986b; Dillon & Marsh, 1981; Hansen, 1985; Kacmarczyk & Coughlin, 1984; Keister & Keister, 1989), or on the effect of salary disparities between higher education and industry on potential faculty shortages (Bowen & Sosa, 1990; Fairweather, 1989; Lozier & Dooris, 1988). More policy-oriented studies of compensation in higher education have considered discrimination by race and gender (Daymont & Andrisani, 1984; Elmore & Blackburn, 1983; Gordon & Morton, 1974; White, 1990), merit pay (Koehler, 1986), mobility (Breneman & Youn, 1988; Burke, 1988; Ehrenberg, Kasper, & Rees, 1991; Matier, 1990; Solomon, 1978), and institutional hiring policies (Wyer & Conrad, 1984).

Studies of Faculty Compensation and Faculty Reward Structures

A few articles have focused on the relationships between compensation and faculty reward structures. Kasten's (1984) review of the literature found that faculty research activity was consistently, positively related to promotion and salary (Fulton & Trow, 1974; Katz, 1973; Rossman, 1976; Siegfried & White, 1973; Tuckman, 1979; Tuckman, Gapinski, & Hagemann, 1977; Tuckman & Hagemann, 1976; Tuckman & Leahy, 1975). The relationships between teaching, promotion, and salary were ambiguous; teaching has been found positively related to salary and promotion (Hoyt, 1974; Katz, 1973; Koch & Chizmar, 1973; Rossman, 1976; Salthouse, McKeachie, & Yin, 1978; Siegfried & White, 1973), unrelated to salary and promotion (Tuckman, 1979; Tuckman, Gapinski, & Hagemann, 1977; Tuckman & Hagemann, 1976, and negatively related to salary and promotion (Marsh & Dillon, 1980; McLaughlin, Montgomery, & Mahan, 1979). In her own work at a single research university, Kasten found research and teaching positively related to compensation, although research activity was more highly predictive of salary than was time spent on teaching (Kasten, 1984, pp. 505-508).

Gmelch, Wilke, and Lovrich (1986) described the conflicting demands on faculty as follows: "The plethora of roles (e.g., teacher, adviser, researcher, university citizen, and departmental colleague) and the existence of numerous factions demanding attention produce a multifaceted complex of strains on individuals in the academic role" (p. 267). Gmelch and colleagues found that the ambiguity of faculty reward structures, including insufficient rewards for teaching, was the primary factor in contributing to job stress for faculty. Their research confirmed earlier work which found that the discrepancy between time devoted to teaching, research, and service and the relative importance of these actviities in faculty reward structures caused a high degree of stress among academics (Baldridge, Curtis, Ecker, & Riley, 1978; Gmelch et al., 1986, p. 272; Hind, Dornbusch, & Scott, 1974).

Berman and Skeff (1988) found that faculty viewed teaching as a highly important activity, which was influenced by extrinsic rewards (also see Jabker & Halinski, 1978) and by the internal motivation of faculty (also see O'Connell, 1983). In making recommendations to focus on intrinsic rewards to enhance teaching, Berman and Skeff assumed that teaching is a positive (or at least neutral) factor in the extrinsic reward structure, an assumption which is examined in this paper.

PURPOSE

This report centers on the relationships between faculty activities--teaching and instruction, research and scholarship, administration, public service--and compensation to examine the implicit emphasis given by academic institutions on various faculty behaviors through compensation. To examine the relative importance of teaching in the faculty reward structure, three competing perspectives were examined: (a) teaching is a positive factor in compensation (i.e., faculty who spend mroe time teaching and whose teaching productivity is high are paid the most), (b) teaching is a neutral factor in compensation (i.e., teaching is not a significant predictor of compensation), and (c) teaching is a negative factor in compensation (i.e., people who spend more time teaching get paid less). The intent is to provide empirical evidence about the messages that faculty receive about the importance of their work lives through compensation, and the potential of these messages for improving (or not improving) the quality of instruction in higher education.

THE STUDY

Data for this research were gathered from the 1987-88 National Survey of Postsecondary Faculty, sponsored by the National Center for Education Statistics. The national survey examined a nationally representative sample of 11,071 faculty from 480 colleges and universities. The institutional sample was stratified by Carnegie type (Carnegie, 1987), source of control, and size (estimated number of faculty). Institutional types included research universities, whose faculty train the majority of doctorates in the United States and which house the majority of funded research; doctoral-granting universities, whose faculty also train doctoral students and conduct research but at a lower level than their counterparts in research universities; comprehensive colleges and universities, which focus on liberal arts and professional programs at the undergraduate and masters-degree levels; liberal arts colleges; other four-year institutions, which in this study were predominantly professional schools of engineering and medicine; and two-year colleges. The sample of faculty within institutions was stratified by full- or part-time status and by program area. Eligible sample members were faculty who had some instructional duties during the Fall term, 1987 (Russell, Fairweather, Cox, Williamson, Boismier, & Javitz, 1990, p. 97).

8,383 full- and part-time faculty from 424 institutions responded, a faculty response rate of 76 percent. By type of institution, faculty response rates varied from a low of 72 percent for research universities to a high of 77 percent in liberal arts colleges (Russell, Fairweather, Cox, Williamson, Boismier, & Javitz, 1990, p. 98).

Population estimates from survey data were based on weights derived from the inverse of the probability of a faculty member in a particular type of institution being selected. The probability of selecting a faculty member for the sample was a function of the odds of an institution being selected from the universe of accredited postsecondary institutions, the probability of a faculty member being selected from the population of faculty within his or her institution, and the sampling rate for employment status (full- or part-time) and program area (Russell, Fairweather, Cox, Williamson, Boismier, & Javitz, 1990, p. 99).

The focus of this report is on full-time, tenure-track faculty from 4-year institutions (n = 4,481; weighted n = 343,343). The range of institutional types includes research universities, doctoral-granting institutions, comprehensive colleges and universities, liberal arts colleges, and other four-year institutions.

STUDY VARIABLES

The National Survey of Postsecondary Faculty covered a broad range of topics relevant to developing a portrait of the professoriate. These topics include the nature of employment, job satisfaction, academic/professional background, institutional responsibilities and workload, benefits and professional development activities, compensation, academic interests and values, and sociodemographic characteristics (see Appendix H for the survey instrument). This research used variables related to faculty and institutional demographics, faculty activities and workload, and compensation. The list of variables is shown in Table 1. The definition of variables is elaborated below.

Compensation

Two measures of compensation were used in this research: basic salary from the institution and total income from the institution.

Basic Salary from Institution

Basic salary from the institution was estimated by faculty responding to the following question: "For the calendar year 1987, what were your gross earnings before taxes for your basic salary at this institution?"

Table 1

Study Variables

Income

- Basic Salary from Institution
- Total Income from Institution

Demographic Characteristics

- Age
- Gender
- Ethnic/Racial Minority
- Highest Degree Awarded
- Program Area

Length of Service

- Time in Current Rank
- Years in Current Position

Teaching/Instruction

- Percent of Time Spent on Teaching/Instruction
- Student Contact Hours
- Hours in Class per Week
- Taught only Undergraduate Students
- Taught only Graduate Students

Table 1 (concluded)

Study Variables

Research/Scholarship

Percent of Time Spent on Research/Scholarship

Total Refereed Publications, Career

Principal Investigator, Externally-funded Research Project

Administration

Percent of Time Spent on Administration

Community/Public Service

Percent of Time Spent on Community/Public Service

Total Income from Institution

Faculty estimates of the basic salary, other income from teaching at the institution (e.g., summer school), supplements not included in the basic salary, and other income from the institution were added to form total income from the institution.

Demographic Characteristics

Faculty demographic characteristics examined in this study were age (during Fall term 1987), gender, ethnic/racial minority status, highest degree awarded, and program area. A respondent was classified as a member of a racial or ethnic minority if she or he was (a) caucasian and of Hispanic descent, (b) American Indian, (c) Asian/Pacific Islander, or (d) Black. Highest degree awarded consisted of having a doctorate or professional degree, or not (masters and bachelors/other were the other categories). Program area was the primary field of study in which a faculty member worked: agriculture/home economics, business, education, engineering, fine arts, health sciences, humanities, natural sciences, social sciences, and other fields. For multivariate analyses, primary field of study was categorized into a three-part variable called "high paying field" based on average basic salary (1 = program areas with average salaries above the mean--engineering and health sciences, 0 = at the mean--agriculture/home economics, business, natural sciences, -1 = below the mean--education, fine arts, humanities, social sciences, other fields).

Length of Service

Length of service was measured by time in current rank (i.e., the number of years since achieving the rank held at the institution in question during Fall term 1987) and the number of years in the current position at the institution in question (irrespective of changes in rank).

Teaching/Instruction

Faculty instruction-related activities consisted of measures of how faculty spent their time, workload, and productivity. These are not measures of instructional quality. Nevertheless, these generic measures of productivity provide insights into how faculty are rewarded for their efforts.

Three measures of instruction-related activities and workloads were used: percent of time spent on teaching and instruction, hours spent in the classroom per week, and the type of student taught (undergraduate, graduate, or both). Total student contact hours generated during Fall term, 1987 was used as a measure of instructional productivity. For percent of time spent on teaching and instruction, faculty were asked to estimate the percentage of their total working hours spent on a dozen different activities during Fall term, 1987. The estimated percentage of time spent on teaching and instruction was aggregated from the estimated the percentage of time spent on working with student organizations; teaching, advising, and supervising students; and grading papers, preparing courses, and developing new curricula. For Fall term 1987, student contact hours were estimated by the sum across all courses taught of the number of hours a class met per week times the number of students enrolled in the class.

Research/Scholarship

Research and scholarship was examined by one measure of faculty activities--percent of time spent on research and scholarship--and two measures of productivity--total refereed publications during the career, and whether or not the respondent was a principal investigator (or co-principal investigator) on an externally-funded research project during Fall term, 1987. Percent of time spent on research and scholarship was the combined percentage time spent on research, scholarship, preparing or reviewing articles or books, and attending or preparing to attend professional meetings or conferences; giving performances in the fine or applied arts; and seeking outside funding for research. Total refereed publications for the career included the total number of refereed articles, chapters in edited volumes, textbooks, other books, monographs, and reviews of books, articles, or creative works. Being designated as a principal investigator or co-principal investigator meant having at least one research project during Fall term, 1987, funded by the federal government, state or local governments, foundations or other nonprofit organizations, or industry. Individuals whose sole support for research was an institutional grant were not considered to be principal investigators by this standard.

Administration and Public/Community Service

To fill out the picture of the faculty workload, estimates of the percent of time spent on administrative activities and on public or community service were also included.

ANALYSES AND PRESENTATION OF RESULTS

Using weighted estimates of population parameters, basic salary and total income from the institution were first examined by univariate analyses of general characteristics which might affect compensation, including institutional type; program area; faculty demographic characteristics; length of service; and faculty activity, workload, and productivity. Correlations between measures of faculty activities and compensation were also examined.

To study the combined relationships between faculty demographic characteristics, activities and workload, productivity, and compensation, a principal components analysis with oblique rotation was first completed to combine highly correlated predictors into composites. Several composites were formed, and these were used in multiple regression models where basic salary and then total income from the institution were regressed on these modified predictors. Regression models were completed by type of institution, program area, and academic rank within type of institution, the latter to control better for seniority and other length of service effects.

RESULTS

The following results use basic salary as the criterion. Findings for total income from institution, which are shown in the appendices, are substantially the same. Figures in the text employ averages; additional data on standard errors are shown in the appendices. All references to "significant" refer to a statistically significant difference of at least .05 (based on two-tailed tests).*

Results of univariate analyses are presented first, including an examination of the relationships between faculty demographics, institutional types, and program areas with basic salary. These results are followed by univariate and crosstabulation analyses of the relationships between faculty activities in teaching, research, administration, and service with basic salary. Quartiles were used to form groupings of variables for crosstabulation analyses. Next, correlational analyses are shown, and the creation of composite variables from principal components analyses discussed. Finally, the multiple regression analyses present the combined relationships between faculty demographic characteristics, length of service, and faculty activities with basic salary.

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* The presentation of t-test results for mean differences or for differences between proportions is as follows: t(comparison reference) = t-value, where, for example, the comparison might be research universities versus comprehensives [referred to as t(res/comp)]. The relevant symbols are: res = research universities, doc = doctoral-granting institutions, comp = comprehensive colleges and universities, lib = liberal arts colleges, other = other four-year institutions. Other comparisons are also abbreviated, such as the comparison between less than 35% of time spent on research versus 75% or more, which is symbolized as t(35/75).

Overall Compensation

Table 2 presents the average compensation for full-time, tenure-track faculty in four-year colleges and universities, both overall and by basic salary; total institutional income; consulting income; and other outside income. Basic salary is the amount of compensation received for the standard 9-month (or 9-month equivalent) faculty contract. Other institutional income includes other teaching at the institution (beyond teaching included in the basic salary), supplements not included in the basic salary, nonmonetary compensation from the institution, and any other institutional income. Total institutional income is the sum of the basic salary plus other institutional income. Consulting income includes legal or medical services or psychological counseling, outside consulting, professional performances or exhibitions, and honoraria. Other outside income includes compensation from another academic institution, self-owned business, royalties or commissions, and other outside sources.

What Characteristics Differentiate Faculty Salaries?

Institutional Type

Basic compensation varies directly by type of institution (see Figure 1). Faculty in other four-year institutions, which consist in this

Table 2

Mean income for tenure-track, full-time faculty, by combined source of income: Fall 1987

Unweighted N = 4,332
Weighted N = 329,945

Source	Mean	Std. Error
Total	$52,211	$518
Basic salary	42,498	286
Other institutional income	4,187	229
[Total institutional income	46,684	397]
Consulting income	3,567	197
Other outside income	2,266	225

KEY

Other institutional income = Other teaching at institution, supplements not included in basic salary, nonmonetary compensation from institution, any other institutional source.

Total institutional income = Basic salary, other institutional income.

Consulting income = legal/medical services or psychological counseling, outside consulting, professional performances/exhibitions, honoraria.

Other outside income = Other academic institution, self-owned business, royalties/commissions, other job, nonmonetary compensation (other than from own institution), pension/retirement, grants/other research income, other sources.

study mostly of medical and engineering schools, and faculty in research universities are paid the most, followed by faculty in doctoral-granting universities, comprehensives colleges, and liberal arts colleges.*

Program Area

As shown in Table 3, faculty in engineering ($t = 3.41$, $p < .001$) and health sciences ($t = 7.89$, $p < .001$) are paid above the national average basic salary. Faculty in agriculture/home economics, business, and natural sciences are paid at the national average. Faculty in education ($t = -10.05$, $p < .001$), the fine arts ($t = -13.13$, $p < .001$), the humanities ($t = -13.28$, $p < .001$), social sciences ($t = -7.96$, $p < .001$), and other fields ($t = -3.87$, $p < .001$) are paid below the national average.

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* t(other/res) = 2.55, $p < .05$; t (res/doc) = 14.89, $p < .001$; t (doc/comp) = 2.65, $p < .01$, t (comp/lib) = 9.84, $p < .001$.

Type of Institution

Mean Income for Tenure-Track, Full-Time Faculty: Fall 1987

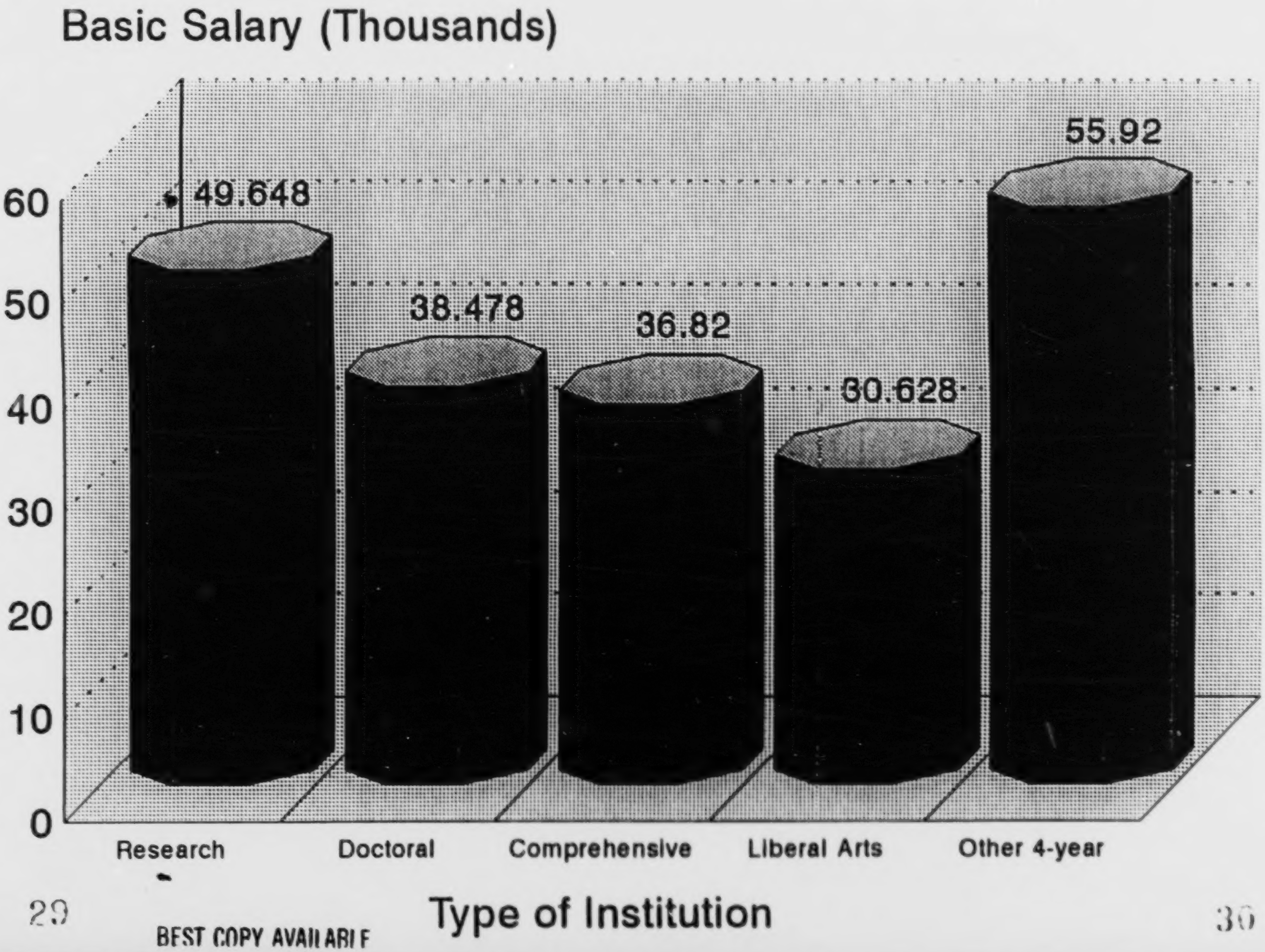

Figure # 1

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Table 3

Mean income from institution for tenure-track, full-time faculty, by program area: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Agriculture/ home economics	42,680	43,462	9,603	192
SE	977	971		
Business	42,235	47,828	20,287	175
SE	1,005	1,236		
Education	36,034	40,266	20,897	403
SE	576	674		
Engineering	45,828	49,743	17,488	164
SE	934	1,081		
Fine Arts	34,452	36,319	22,572	307
SE	542	572		
Health sciences	56,530	66,084	41,374	264
SE	1,756	3,196		
Humanities	36,267	38,434	33,982	1,101
SE	372	397		
Natural sciences	41,825	45,997	54,782	525
SE	676	766		
Social sciences	38,212	41,175	46,587	752
SE	456	522		
Other fields	38,685	41,923	41,044	316
SE	942	1,049		

Demographic Characteristics and Length of Service

Rank

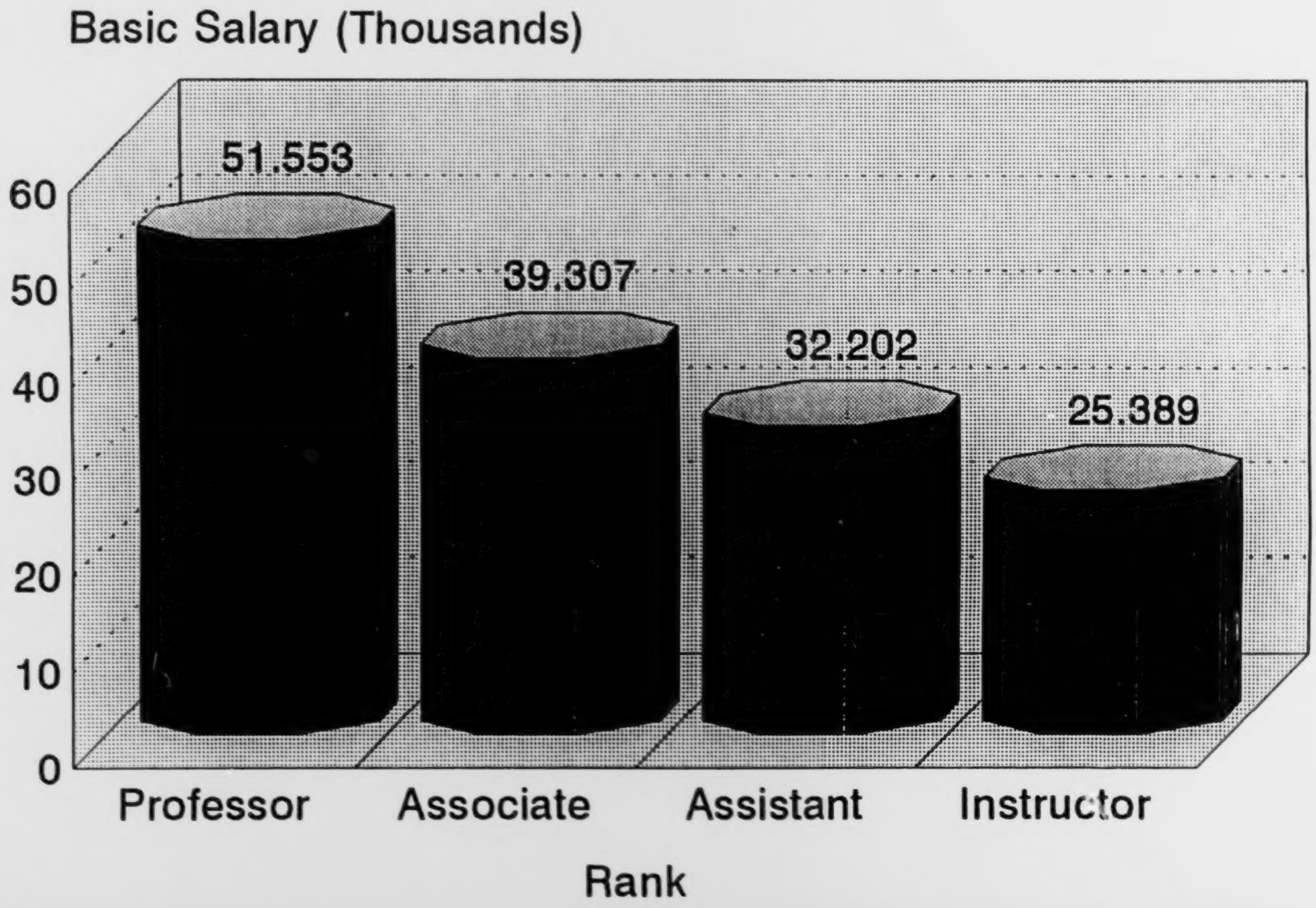
As expected, Figure 2 shows that pay increases with rank [t(prof/assoc = 19.81, $p < .001$; t(assoc/asst) = 12.00, $p < .001$; t(assoc/asst) = 5.18; $p < .001$]. This pattern holds true overall and by type of institution (see Appendix F1).

Age

As shown in Figure 3, compensation increases with age up to but not beyond ages 60-64 [t(30/30-44) = 4.21, $p < .001$; t(30-44/45-54) = 11.43, $p < .001$; t(45-54/55-59) = 2.14, $p < .05$; t(55-59/60-64) = 4.91, $p < .001$). The pattern is essentially the same by type of institution (see Appendix F2) with the exception of liberal arts colleges, where only the youngest faculty are paid substantially less than their older counterparts [t(30-44/45-54) = 4.61, $p < .001$)].

Academic Rank

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Age Group (Years)

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

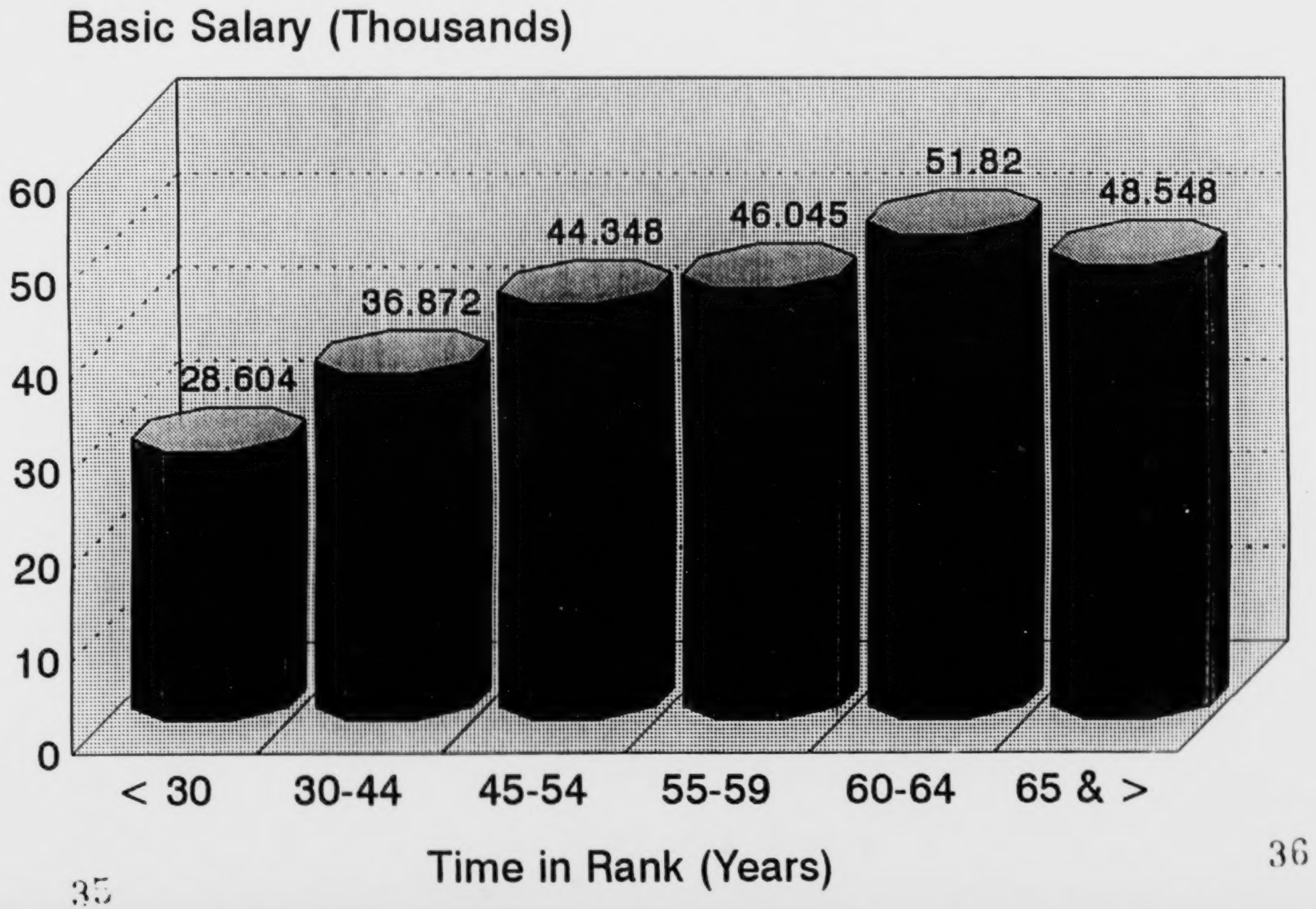


Figure # 5

Gender

Table 4 shows that about one-fifth of tenure-track, full-time faculty are women, and about 10 percent are members of racial or ethnic minorities. For women, the average basic salary is substantially less than for men, both overall [t = 20.53, p < .001] (see Figure 4) and by type of institution (see Appendix F3) [t(res) = 9.98, p < .001; t(doc) = 11.32, p < .001; t(comp) = 11.71, p < .001; t (lib) = 5.93, p < .001].

Racial or Ethnic Minority

Overall, basic salaries for minorities do not differ from their white counterparts (see Figure 5). Within type of institution, minorities are paid less only in liberal arts colleges (see Appendix F4) [t = 2.81, p < .01].

Table 4:

Percentage distribution of tenure-track, full-time faculty, by gender and by racial/ethnic minority: Fall 1987

Gender

	%
Male	79.2
Female	20.8

Racial/Ethnic Minority

	%
Total minority	10.4
Asian	4.8
Black	2.9
Hispanic	2.1
Native American	0.6

Gender

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

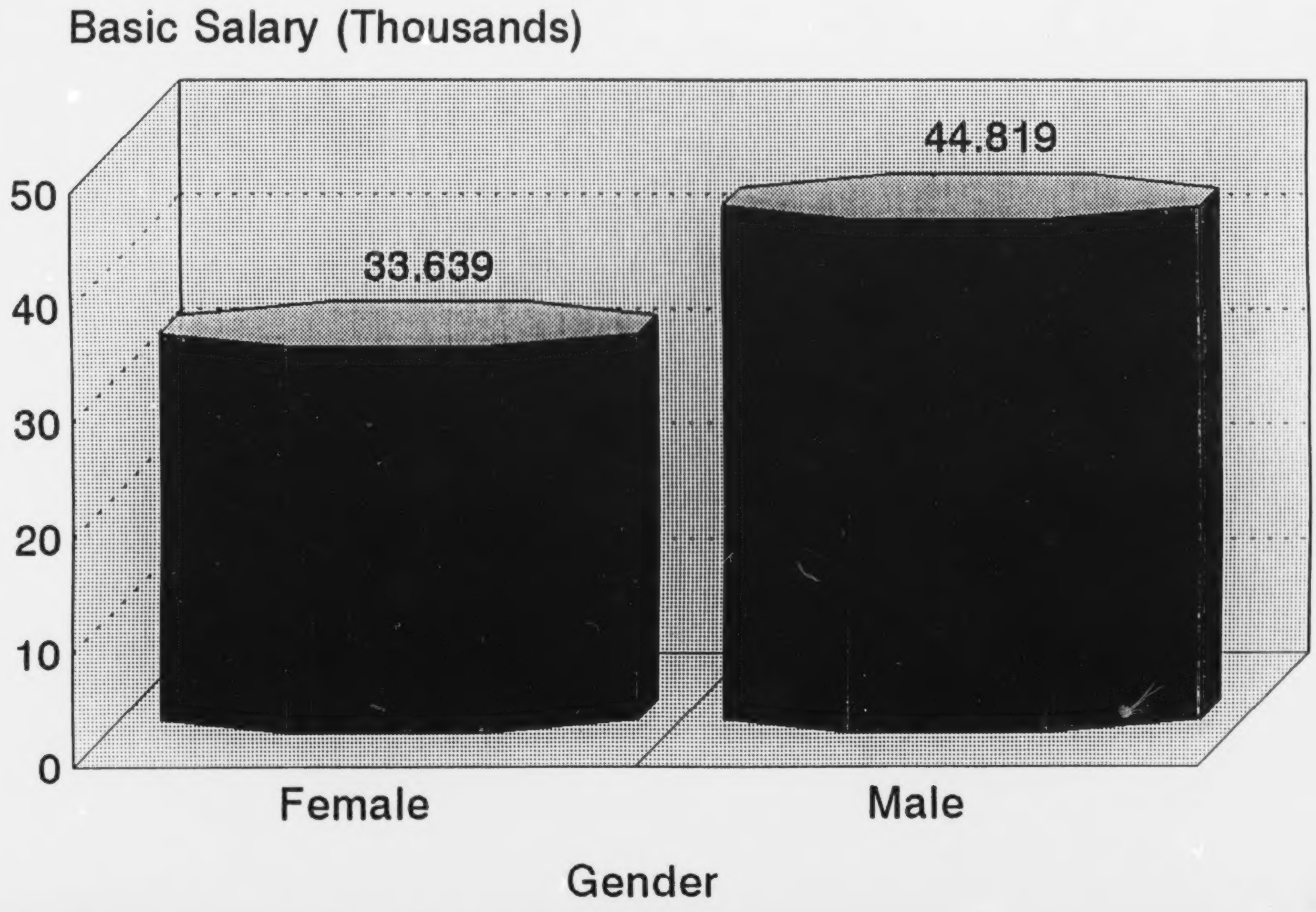


Figure # 4

Highest Degree Obtained

Not surprisingly, having a doctorate or professional degree is positively related to compensation (see Figure 6) [t(doctorate/masters) = 23.97, p < .001]. This pattern holds by type of institution as well (see Appendix F5) [t(res) = 5.33, p < .001; t(doc) = 7.92; p < .001; t(comp) = 13.20, p < .001; t(lib) = 5.09, p < .001].

Time in Rank

As shown in Figure 7, pay increases with time in rank [t(3/3-5) = 3.64, p < .001; t(3-5/6-11) = 5.39, p < .001; t(6-11/12) = 4.82, p < .001]. The overall pattern is identical to the pattern for faculty in comprehensive institutions [t(3/3-5) = 4.93, p < .001; t(3-5/6-11) = 4.16, p < .001; t(6-11/12) = 2.52, p < .05], but varies somewhat by other institutional types (see Appendix F6). Basic salaries for faculty in research universities show a specific breakpoint in time in rank, with faculty serving less than five years being paid less than those with 6-11 years of service (t = 5.30, p < .001) but no differences appearing for service beyond 6-11 years. For doctoral institutions, the key point is between 6-11 years of service and 12 or more years (t = 6.37, p < .001). For faculty in liberal arts colleges, pay increases with time in rank starting after the fifth year of service [t(3-5/6-11) = 5.02, p < .001;

Racial/Ethnic Minority

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

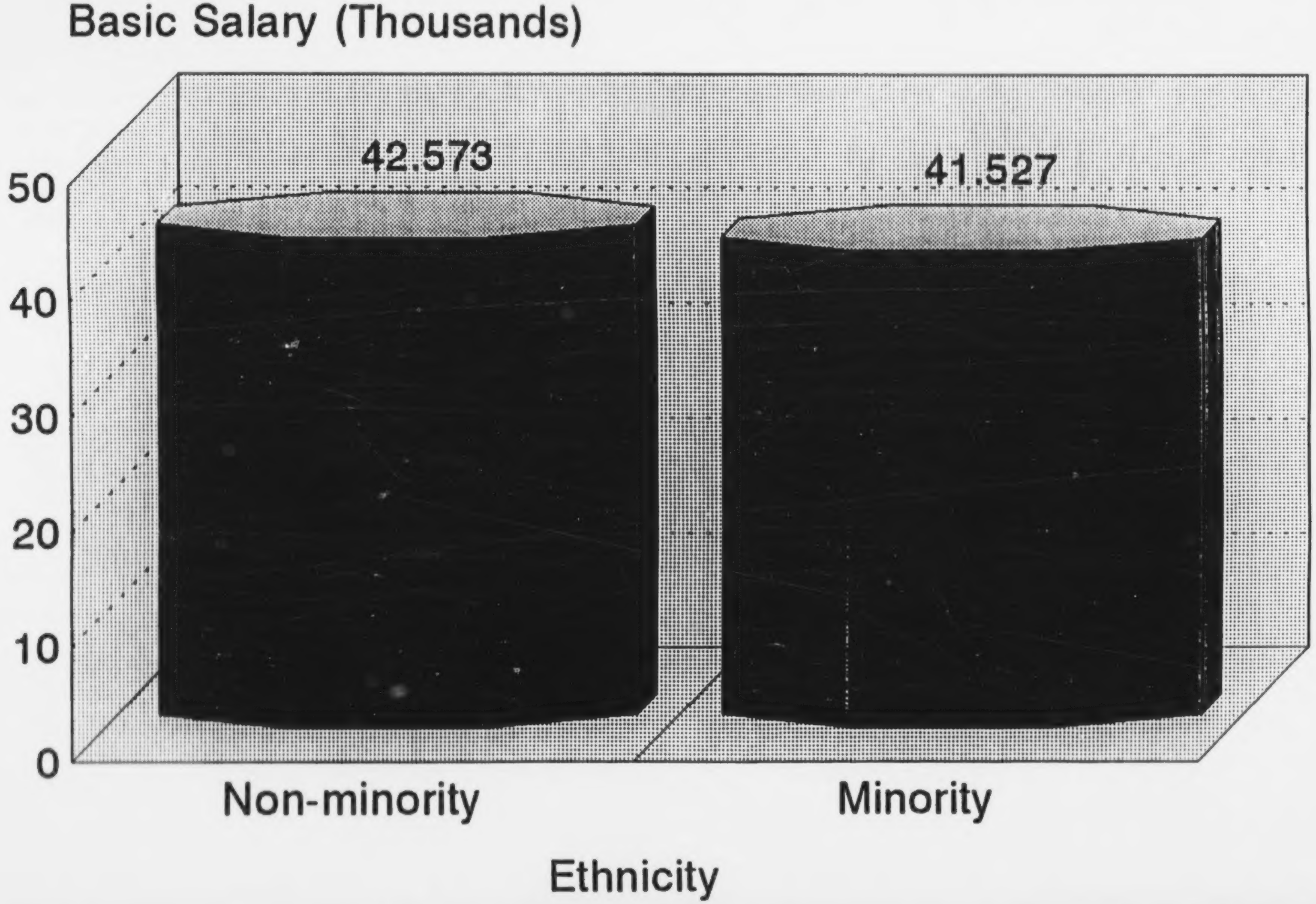


Figure # 5

Highest Degree Obtained

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

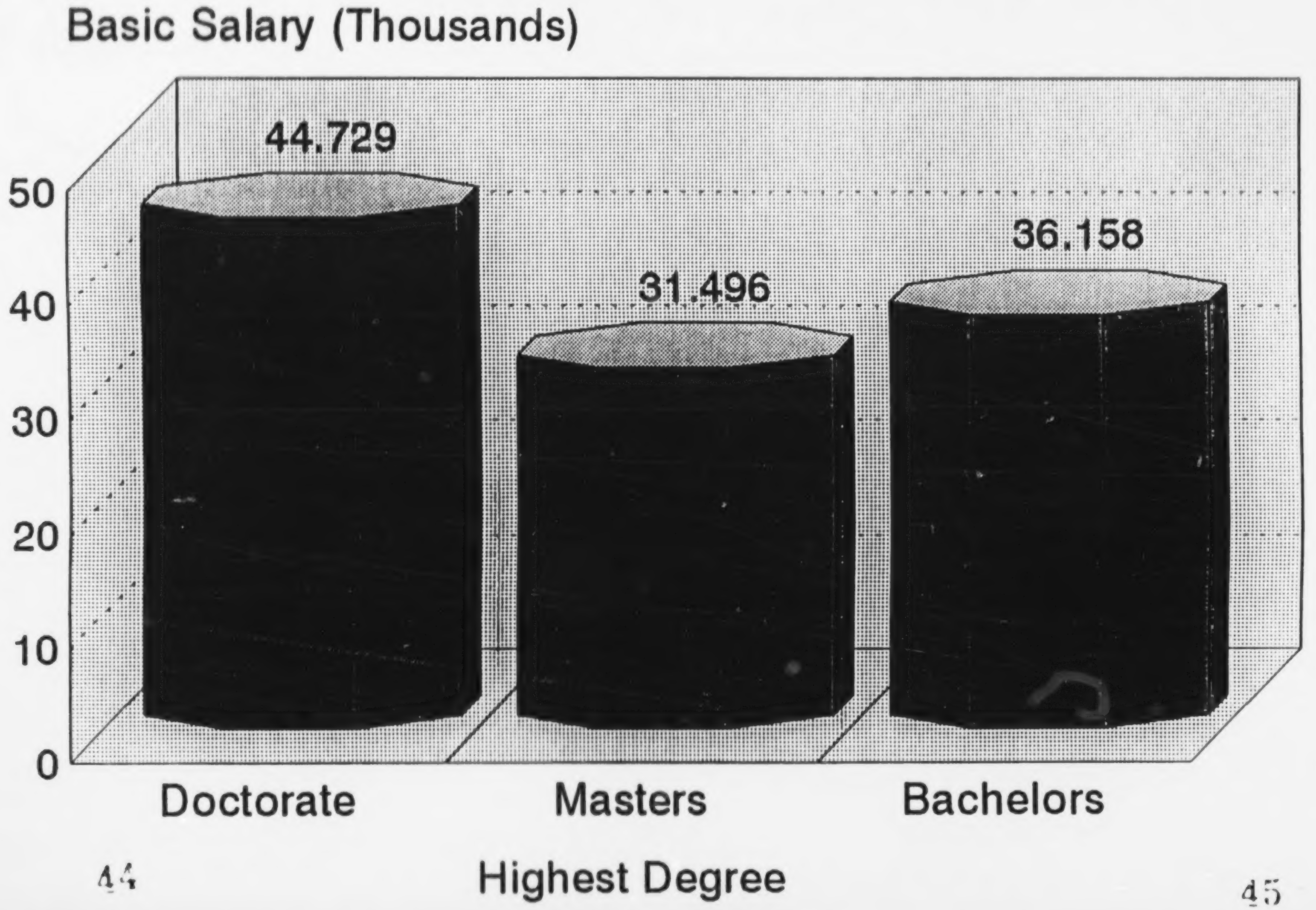


Figure # 6

t(6-11/12) = 3.08, p < .01]. Compensation is not related to time in rank at other four-year institutions.

Years in Current Position

As shown in Figure 8, for all full-time, tenure-track faculty basic salary varies by years spent in the institution up to 8-14 years of service, but not thereafter [t(4/4-7) = 4.95, p < .001; t(4-7/8-14) = 2.58, p < .01]. This pattern is essentially the same for faculty in comprehensive universities and liberal arts colleges, although the differences continue through 20 or more years of service.* At research universities, only faculty with less than four years of service earn significantly less salary than faculty with a longer length of service [t(4/4-7) = 4.08, p < .001]. At doctoral-granting universities, the key breakpoint is at 15 years of service [t(8-14/15-190 = 3.33, p < .001] (see Appendix F7).

---

* Comprehensive colleges and universities: t(4-7/8-14) = 2.74, p < .01; t(8-14/15-19) = 2.05, p < .05; t(15-19/20) = 2.68, p < .01.
Liberal arts colleges: t(4-7/8-14) = 2.09, p < .05; t(8-14/15-19) = 5.99, p < .001; t(15-19/20) = 3.38, p < . 01.

Time in Rank (Years)

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

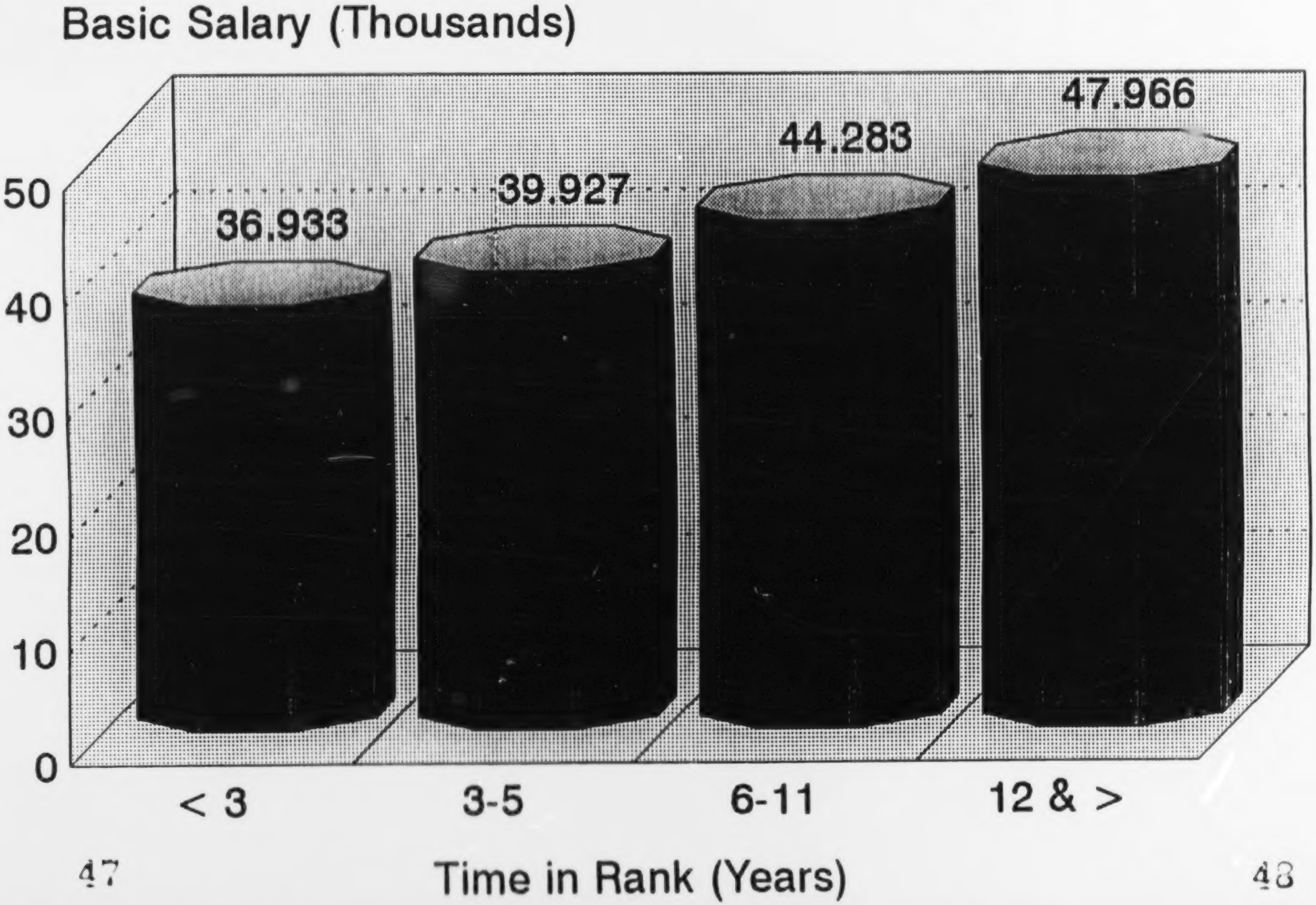


Figure # 7

Years in Current Position at Institution

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

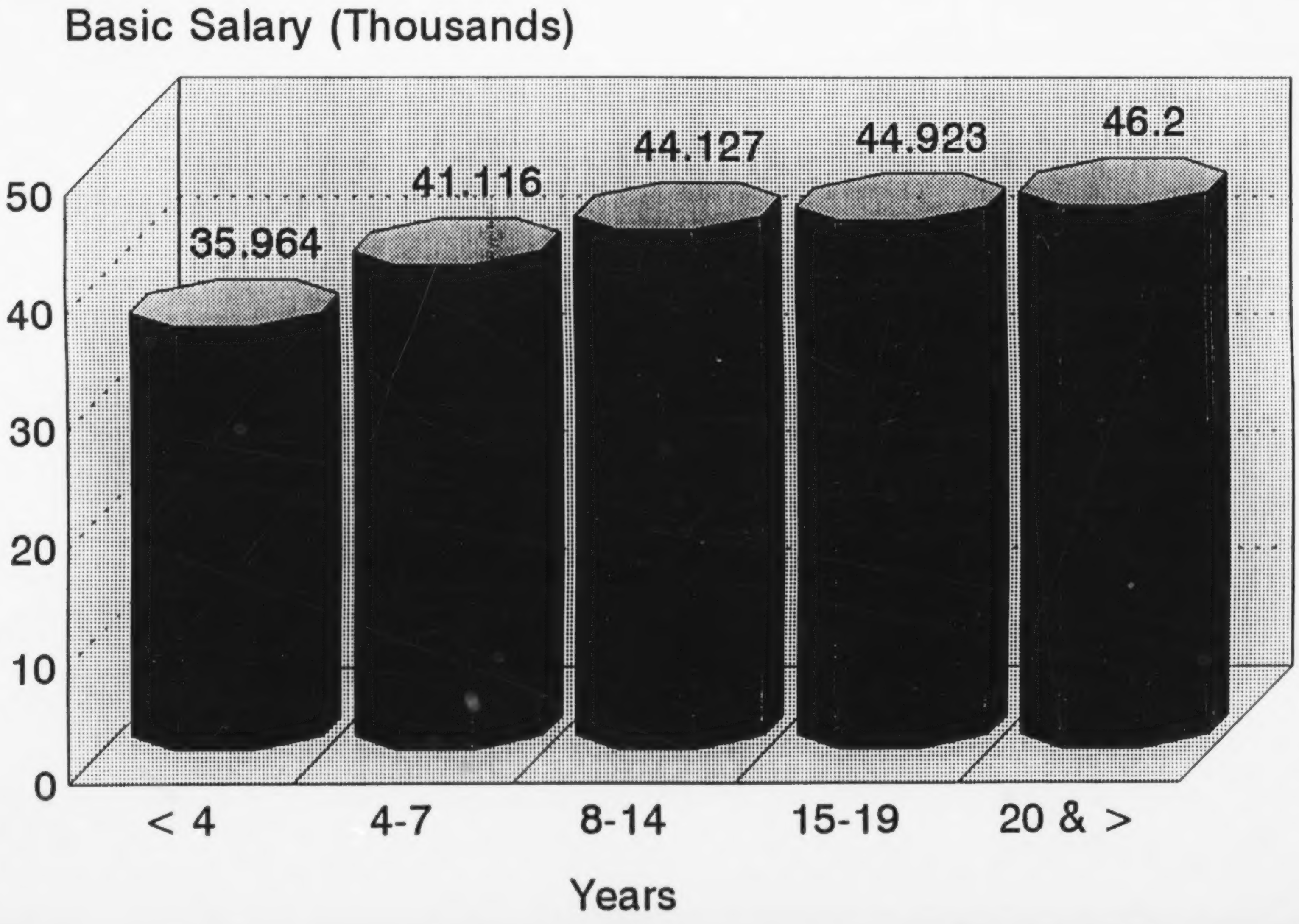


Figure # 8

Summary

Institutional and programmatic characteristics, as well as individual faculty demographics, are related to compensation. Faculty in the research- and graduate-oriented universities are paid the most. Faculty in the health sciences and in engineering are paid at above average salary levels, whereas faculty in education, the fine arts, humanities, social sciences, and other fields are paid below average salaries. These results suggest that multivariate analyses should take into account type of institution, and should include an indicator for field of study (see description of "high paying field").

With the exception of racial/ethnic minority status, personal demographic descriptors are related to basic salary. Salary increases with rank, age, time in rank, and years at the current institution. Faculty holding the doctorate are paid more than those who hold the masters or bachelors degrees. Finally, women faculty are paid less than their male colleagues, overall and by type of institution.

What Behaviors/Activities Differentiate Faculty Salaries?

Are faculty activities rewarded differentially? Previous research suggests that research and scholarship are valued more highly than teaching in promotion and tenure (e.g., Bowen & Shuster, 1986; Boyer, 1987; Carnegie, 1989), but little has been written about the relationship between compensation and faculty activities.

This section examines the relationships between basic salary and various indicators of faculty activities, workload, and productivity in teaching, research and scholarship, administration, and public service. Particular attention is paid to whether teaching is a positive, neutral, or negative factor in faculty compensation.

Teaching/Instruction

Teaching-related activities examined include percent of time spent on teaching and instruction, hours in class per week, student contact hours per semester, and type of student taught (undergraduate students only, graduate students only, or a mixture of both types).

Percent of Time Spent on Teaching/Instruction

For all tenure-track, full-time faculty, the more time spent on teaching and instruction, the lower the basic salary (see Figure 9) [t(35/35-52) = 12.92, $p < .001$; t(35-53/53-71) = 9.71, $p < .001$; t(53-71/72) = 6.13, $p < .001$]. Average basic salary varies in a linear pattern from a low of $34,307 for faculty spending more than 72 percent of their time on teaching, to a high of $56,181 for faculty spending less than 35 percent of their time on teaching. By type of institution, the same pattern holds for faculty in research universities, doctoral-granting institutions, and comprehensive colleges, although in the latter two types of institutions there is no difference in basic salary between the top two quartiles of time spent on teaching (53-71 percent and 72 percent or more).* Time spent on teaching is not related to basic salary for faculty in liberal arts colleges (see Figure 10).

Hours in class per week

For all full-time, tenure-track faculty, the fewer hours spent in class, the higher the pay (see Figure 11). Average basic salary ranges from a high of $50,927 for faculty spending the fewest hours in class (less than six per week), to a low of $36,793 for faculty spending the most time in class per week (12 or more hours), although the difference between salary for those spending 9 to 11 hours in class per week versus those spending 12 or more is not significant [t(6/6-8) = 8.79, p < .001; t(6-8/9-11) = 7.32, p < .001].

The inverse relationship between time spent in class and compensation holds for faculty in comprehensive institutions (see Figure 12). For faculty in doctoral-granting universities, other four-year institutions, and liberal arts colleges, the pattern reflects a dichotomy with those

---

* Research universities: t(35/35-52) = 7.83, p < .001; t(35-53/53-71) = 3.98, p < .001; t(53-71/72) = 3.57, p < .001.
Doctoral-granting universities: t(35/35-52) = 3.52, p < .001; t(35-53/53-71) = 2.81, p < .001.
Comprehensive colleges and universities: t(35/35-52) = 5.70, p < .001; t(35-53/53-71) = 4.17, p < .001.

Percent of Time, Teaching/Instruction

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

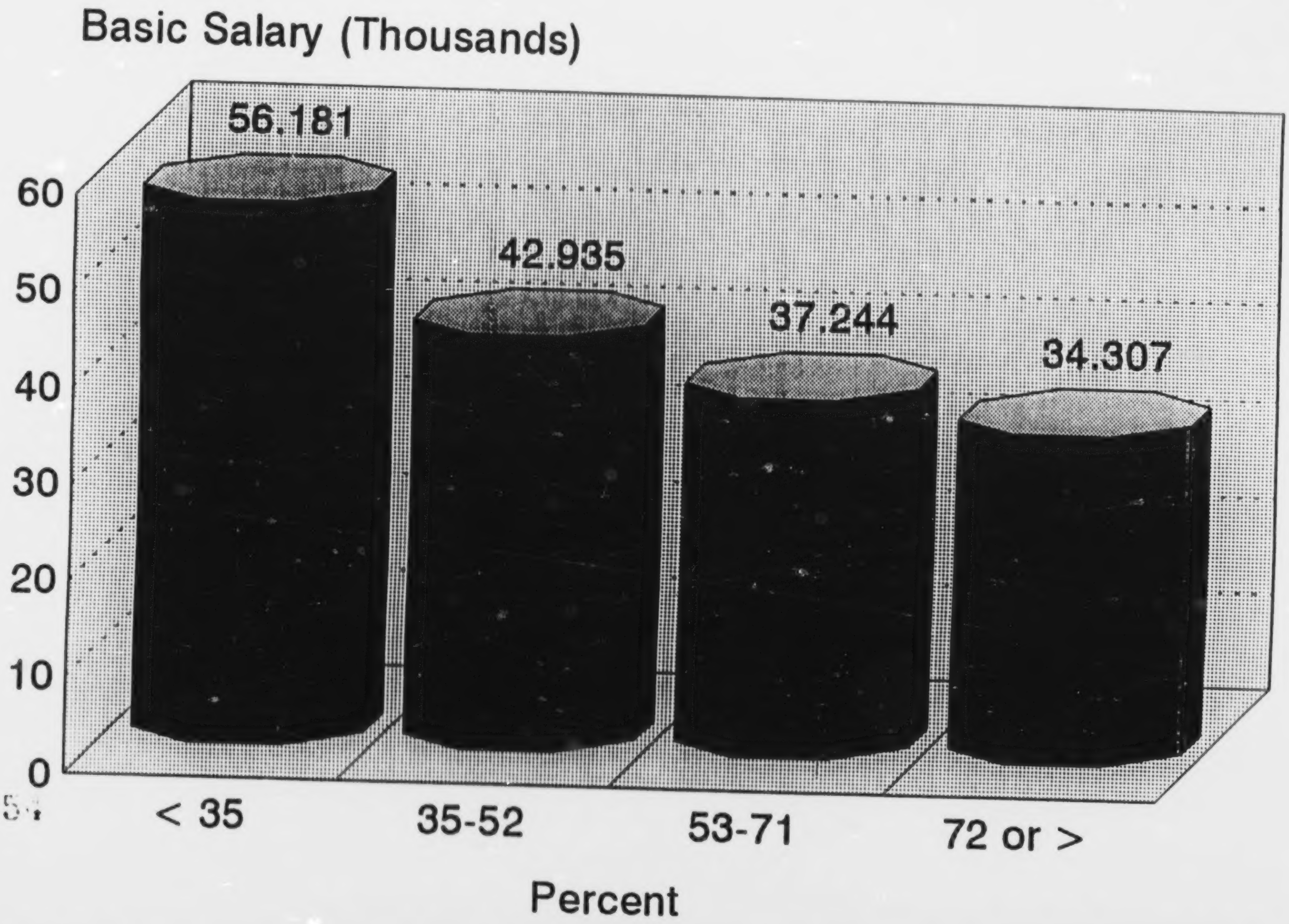
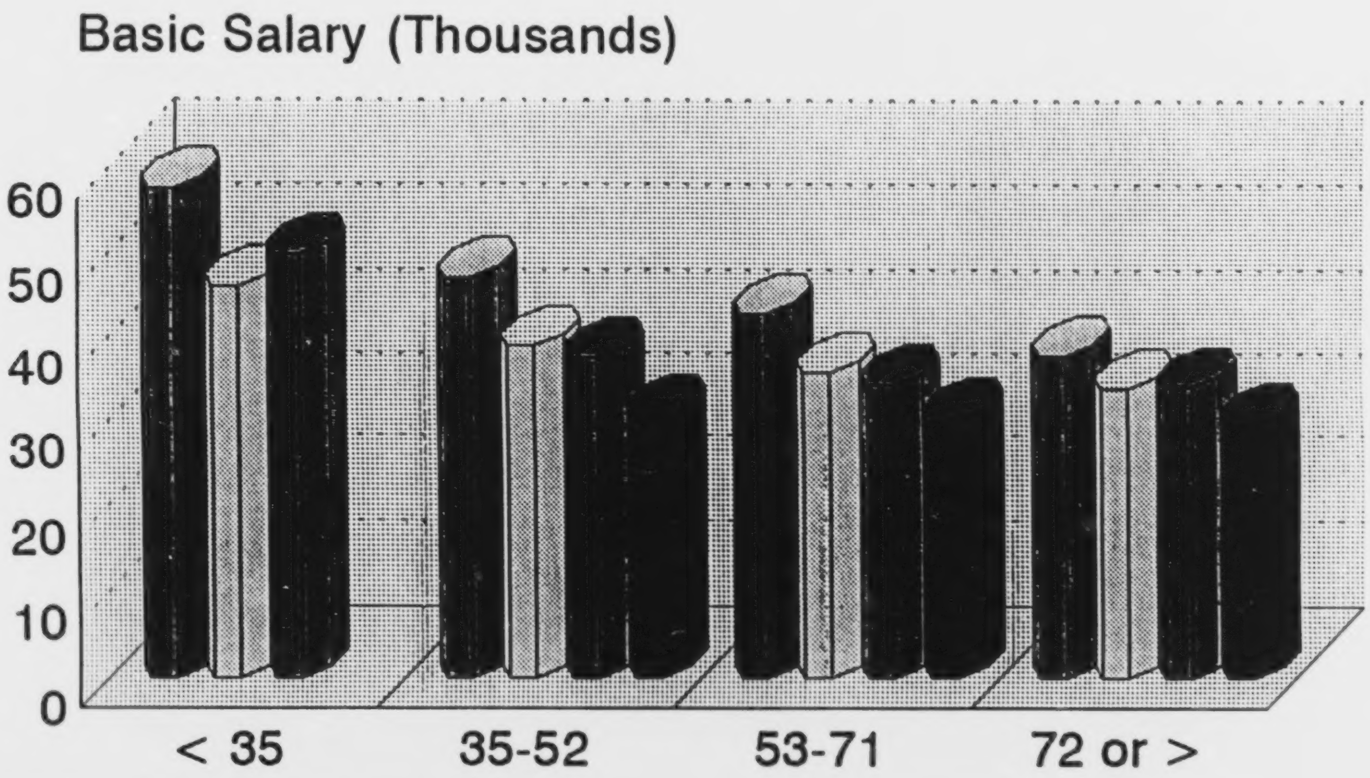


Figure # 9

Percent of Time, Teaching Instruction

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



	< 35	35-52	53-71	72 or >
Research ▩	57.893	47.445	43.142	38.113
Doctoral ☐	46.349	39.18	36.008	34.138
Comprehensive ▨	50.189	37.814	34.551	34.366
Liberal Arts ■		30.908	30.672	30.023

Percent

Figure # 10

spending less than 6 hours in the first two types [$t(6/6-8) = 2.25$, $p < .05$ and $t(6/6-8) = 2.83$, $p < .01$, respectively] and less than 8 hours per week [$t(6-8/9-11) = 2.08$, $p < .05$] in liberal arts colleges earning significantly higher basic salaries. A U-shaped distribution defines the relationship between hours spent in class and compensation for faculty in research universities, where the highest salaries are earned by those spending the least time in class, the lowest salaries by those spending between six and 11 hours in class, and the second highest salaries being earned by those spending the most hours in class per week.*

Student Contact Hours

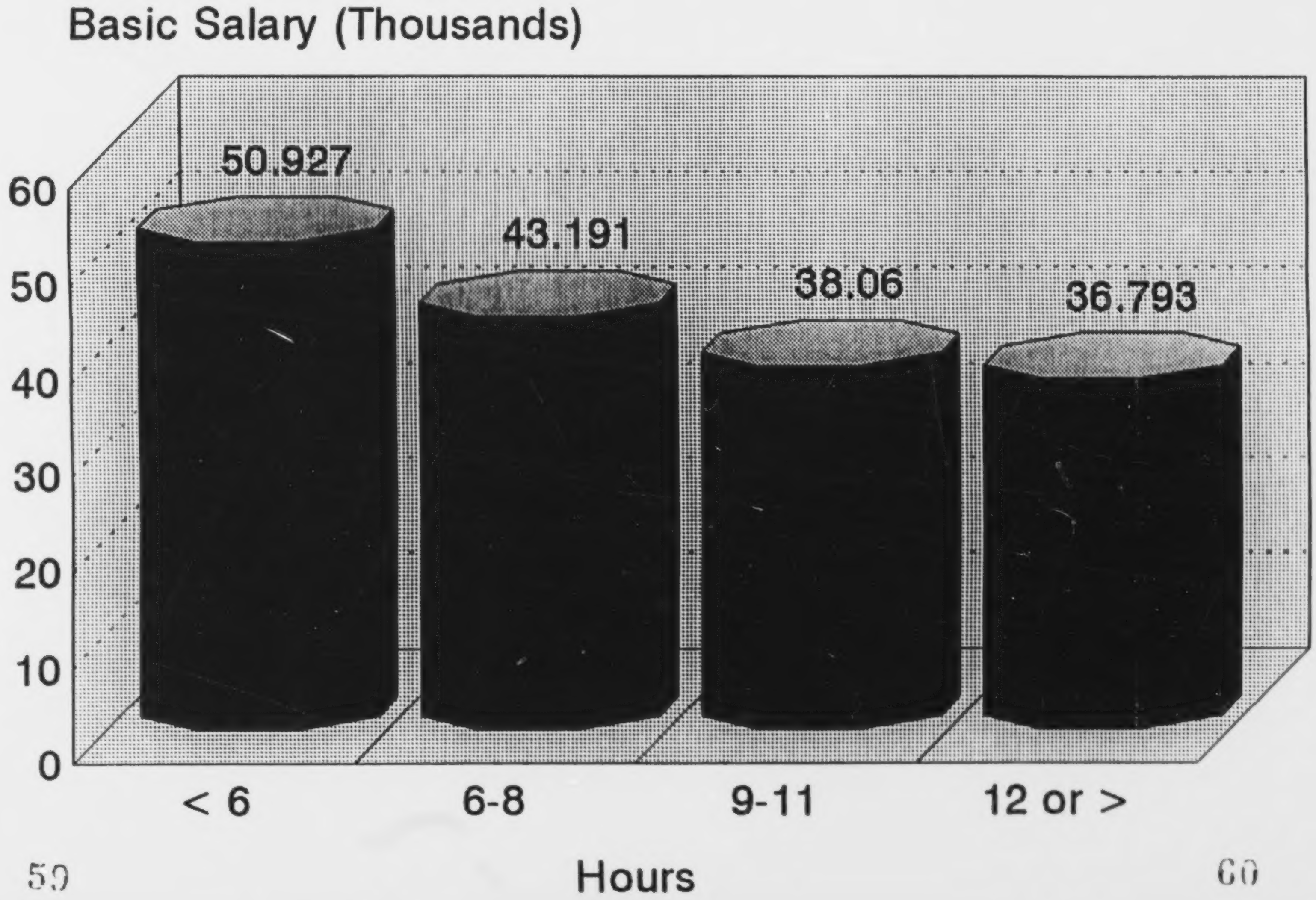
For the measure of teaching-related productivity, student contact hours per semester, the distribution of basic salaries reflects a U-shaped curve. The highest income is earned by those with the least number of student contact hours, dropping to a low point through the mid-range of contact hours, and rising again to the second highest salary for those with the most contact hours (see Figure 13) [$t(110/110-217) = 13.43$, $p < .001$; $t(218-359/360) = -7.39$, $p < .001$].

---

* Research universities: $t(6/6-8) = 4.24$, $p < .001$; $t(6-8/9-11) = 6.02$, $p < .001$; $t(9-11/121) = -4.09$, $p < .001$.
Comprehensive colleges: $t(6/6-8) = 3.26$, $p < .01$; $t(6-8/9-11) = 2.75$, $p < .01$; $t(9-11/121) = 3.13$, $p < .01$.

Hours Per Week Teaching Class

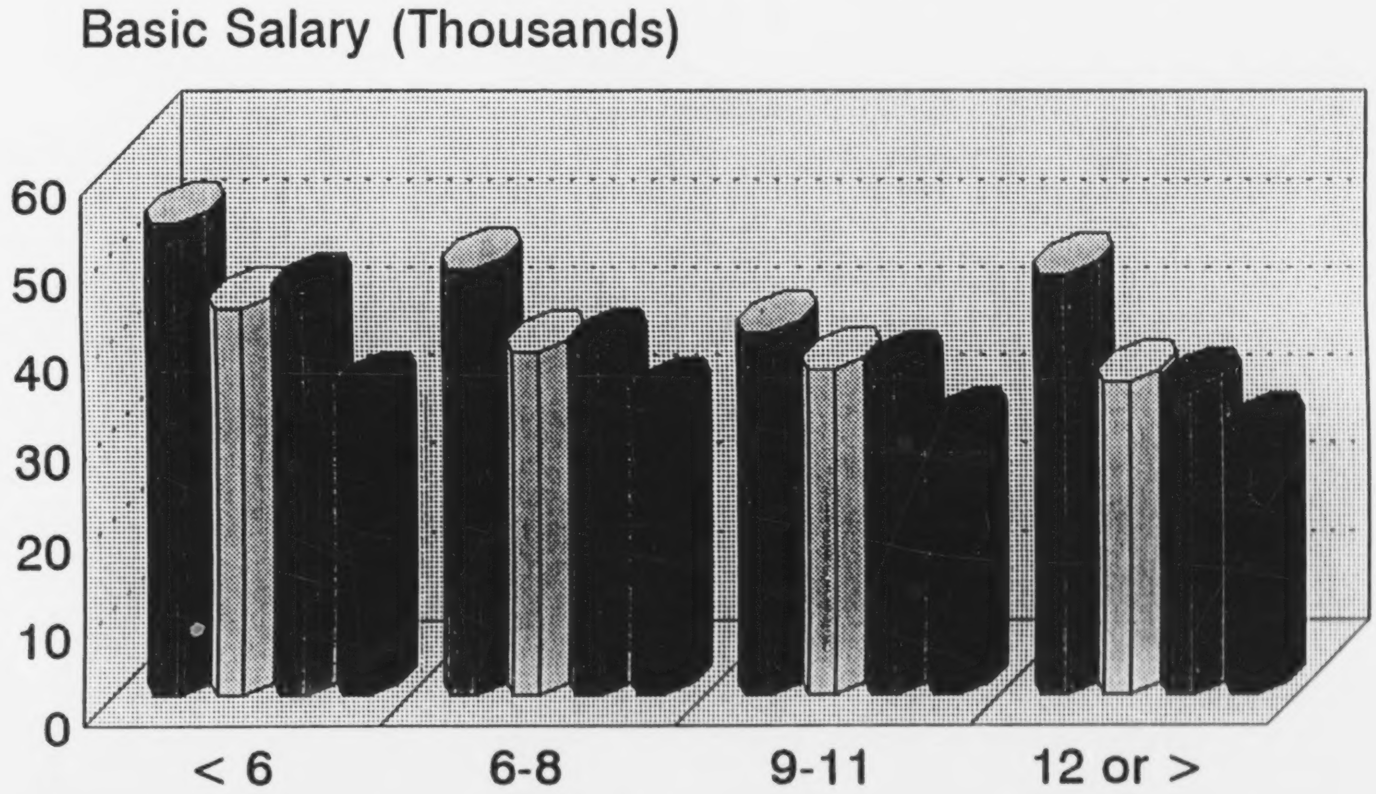
Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Figure

Hours Per Week Teaching Class

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 6	6-8	9-11	12 or >
Research	■	53.239	48.1	40.845	47.542
Doctoral	□	43.558	38.679	36.706	35.263
Comprehensive	▨	45.162	38.817	36.181	34.251
Liberal Arts	■	33.897	33.142	29.708	29.139

61

62

Figure # 12

The same pattern holds for faculty in research universities (see Figure 14) [t(110/110-217) = 7.61, p < .001; t(218-359/360) = -3.56, p < .001]. Similarly, faculty in comprehensive colleges and universities earning the highest pay have the fewest student contact hours [t(110/110-217) = 3.48, p < .001]. Student contact hours are not related to basic salary for faculty in doctoral-granting institutions, liberal arts colleges, or other 4-year institutions.

Type of Students Taught

Faculty who teach only graduate students are paid more than their counterparts who teach both undergraduates and graduate students (t = 10.89, p < .001), and those who teach only undergraduate students (t = 7.68, p < .001) [see Figure 15]. The same pattern holds true for faculty in research, doctoral-granting, and comprehensive institutions (see Figure 16).*

---

* Research universities: t(grad/both) = 4.57, p < .001; t (grad/undergrad) = 3.98, p < .001.
Doctoral-granting universities: t(grad/both) = 4.85, p < .001; t (grad/undergrad) = 3.14, p < .01.
Comprehensive colleges and universities: t(grad/both) = 4.28, p < .001; t (grad/undergrad) = 3.19, p < .01.

Student Contact Hours Per Semester

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

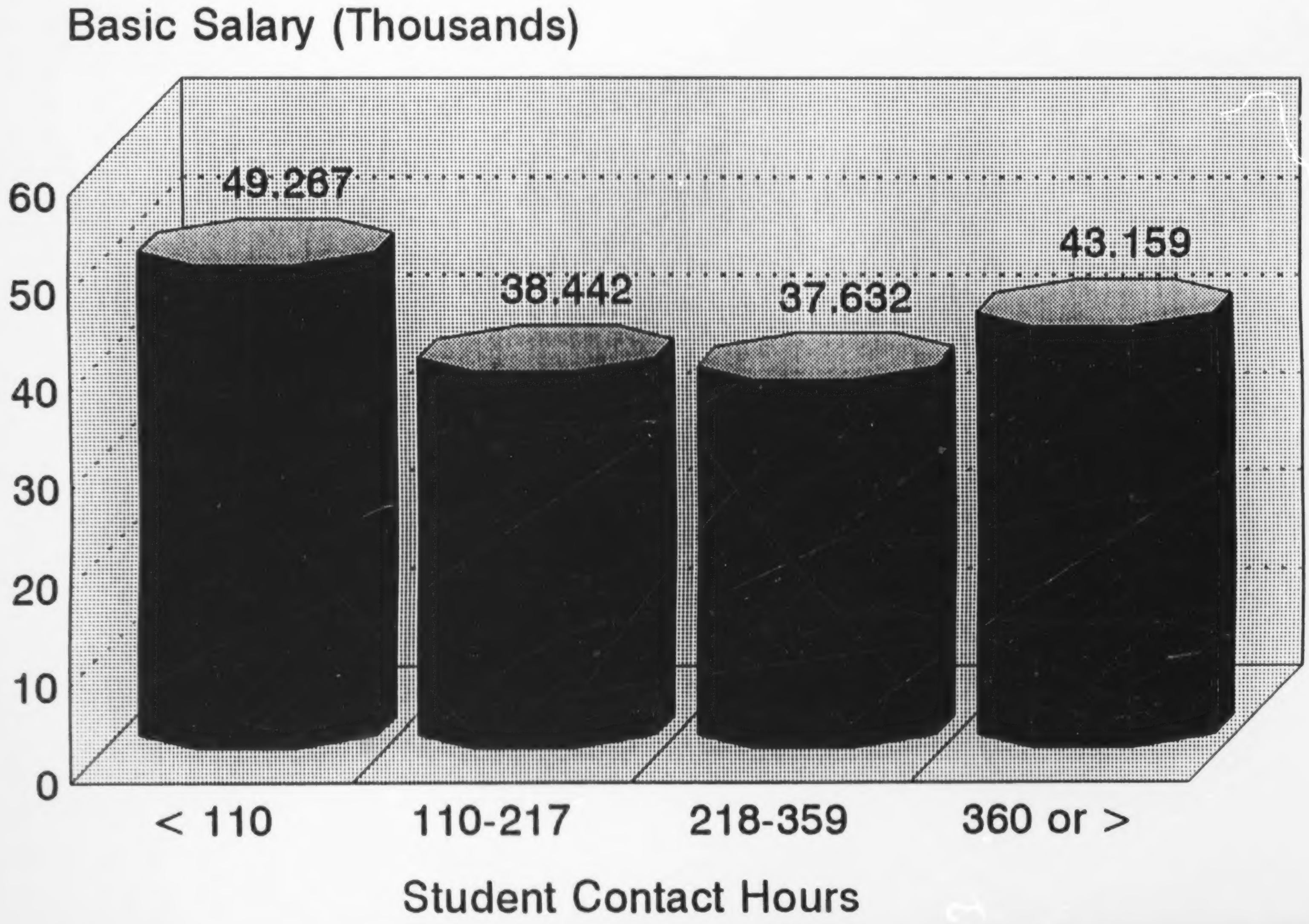
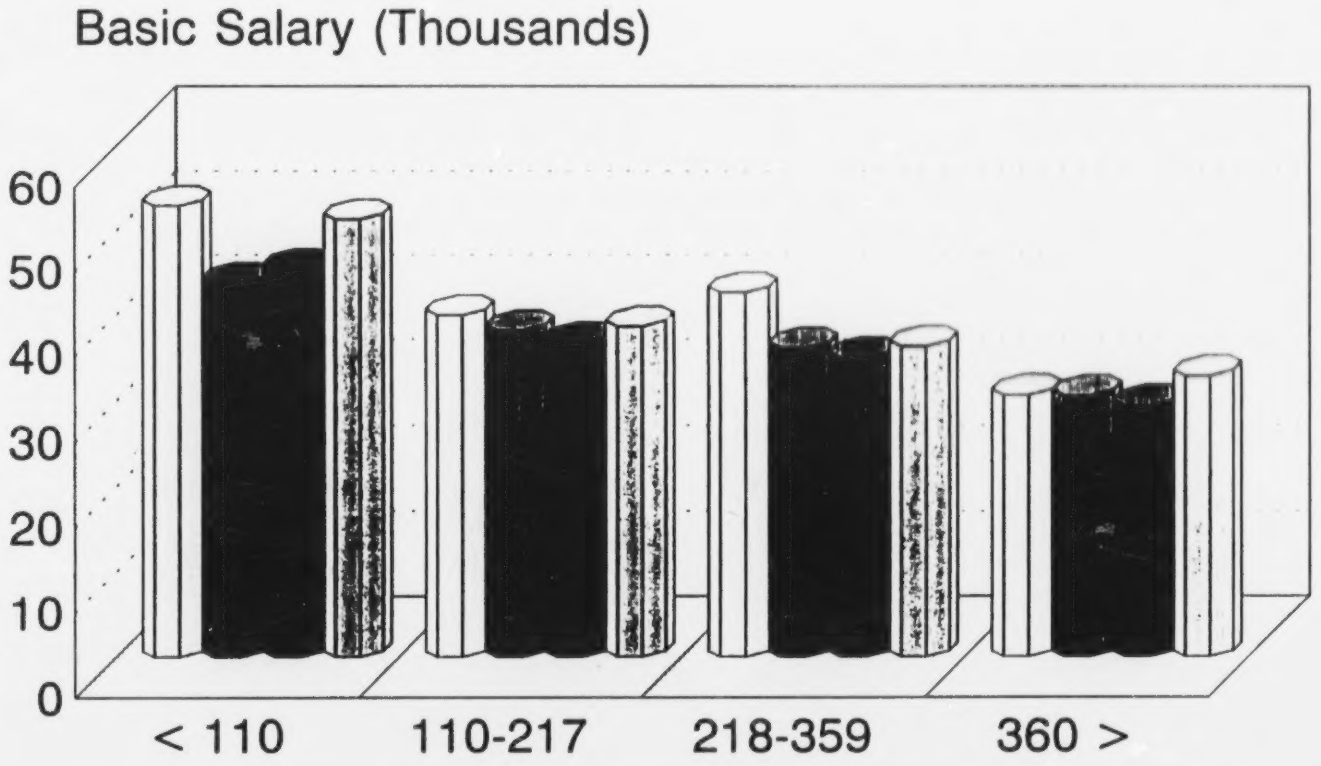


Figure # 13

udent Contact Hours Per Semester

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 110	110-217	218-359	360 >
Research	□	53.026	40.042	42.758	30.742
Doctoral	■	43.887	38.233	36.225	30.649
Comprehensive	■	45.523	36.852	35.076	29.524
Liberal Arts	▨	51.433	38.726	36.417	32.945

Figure 14

Taught Only Undergraduate or Graduate Students

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

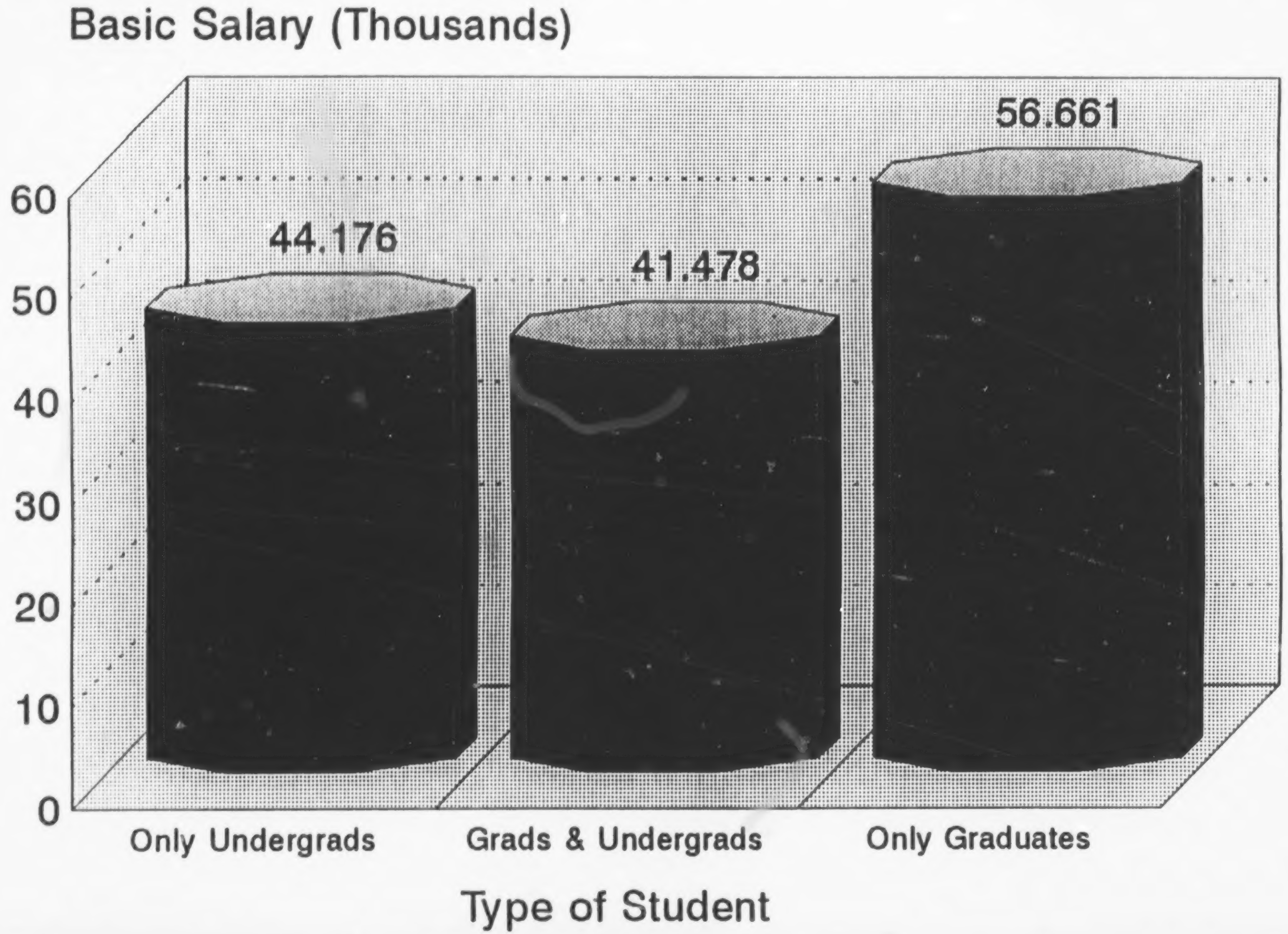
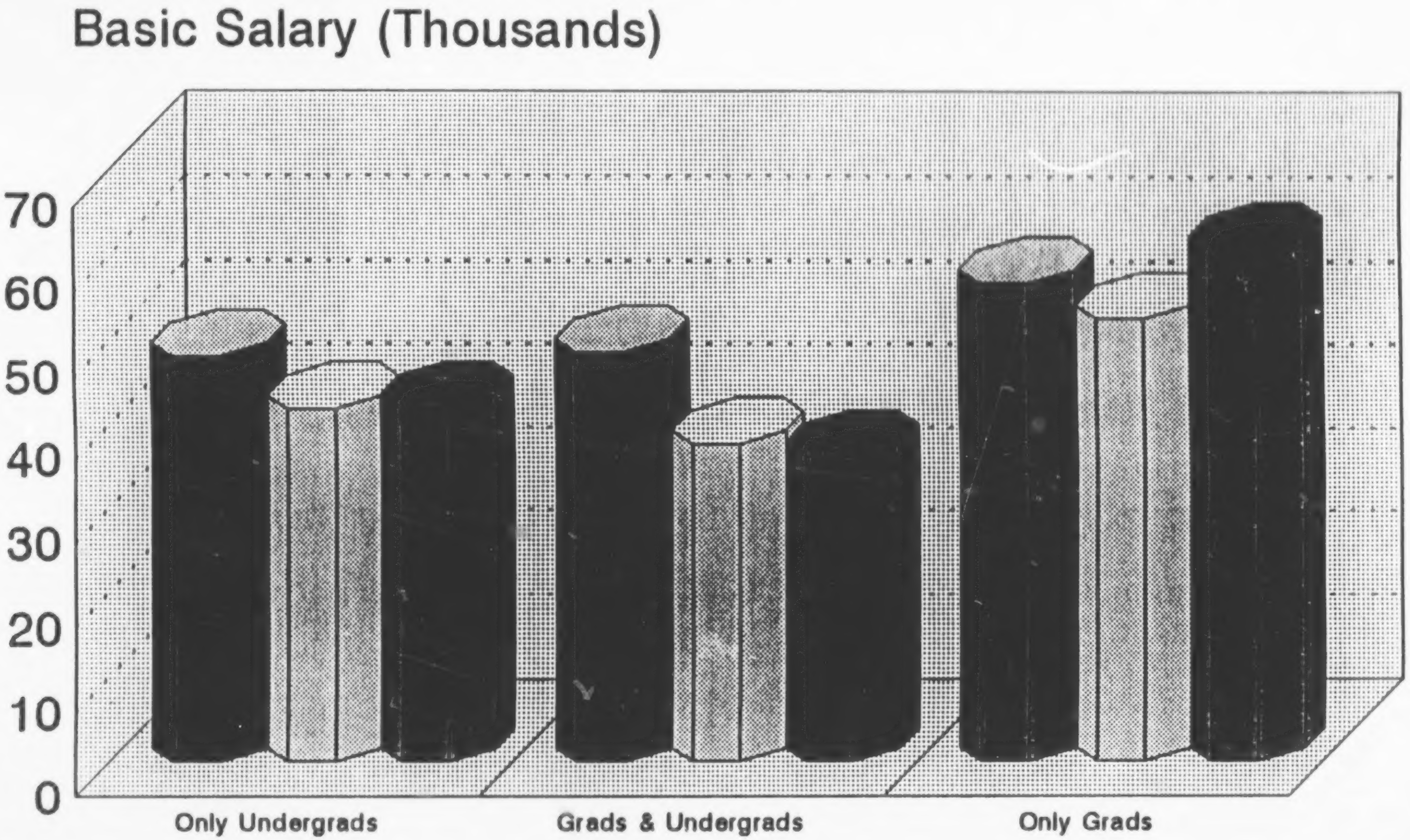


Figure # 15

Taught Only Undergraduate or Graduate Students

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



	Only Undergrads	Grads & Undergrads	Only Grads
Research ■	48.223	48.785	57.118
Doctoral □	42.002	37.795	52.914
Comprehensive ■	42.129	36.235	61.21

Type of Student

Figure # 16

Research/Scholarship

Measures of research and scholarship examined include percent of time spent on research and scholarship, total refereed publications (career), and being a principal investigator on en externally-funded research project.

Percent of Time Spent on Research/Scholarship

The relationship between basic salary and percent of time spent on research and scholarship is the inverse of that for compensation and time spent on teaching: the greater the time spent on research, the higher the compensation (see Figure 17). Salaries range from a high of $48,711 for those spending the most time on research--34 percent or more--to a low of $36,963 for faculty spending less than five percent of their time on research [t(5/5-15) = 3.61, $p < .001$; t(5-15/16-33) = 5.85, $p < .001$; t(16-33/34) = 5.44, $p < .001$].

The same pattern holds for faculty in doctoral-granting universities (see Figure 18) [t(5/5-15) = 2.15, $p < .05$; t(16-33/34) = 3.10, $p < .01$]. For faculty in research universities, comprehensive colleges, and other four-year institutions, only the faculty most committed to research--34% or more of their time--have a significantly higher salary.* Time spent on research is not related to basic salary at liberal arts colleges.

---

* Research universities: t(5/34) = 1.99, $p < .05$.
Comprehensive colleges and universities: t(16-33/34) = 2.39, $p < .05$.
Other four-year institutions: t(5/34) = 2.14, $p < .05$.

Percent of Time, Research/Scholarship

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

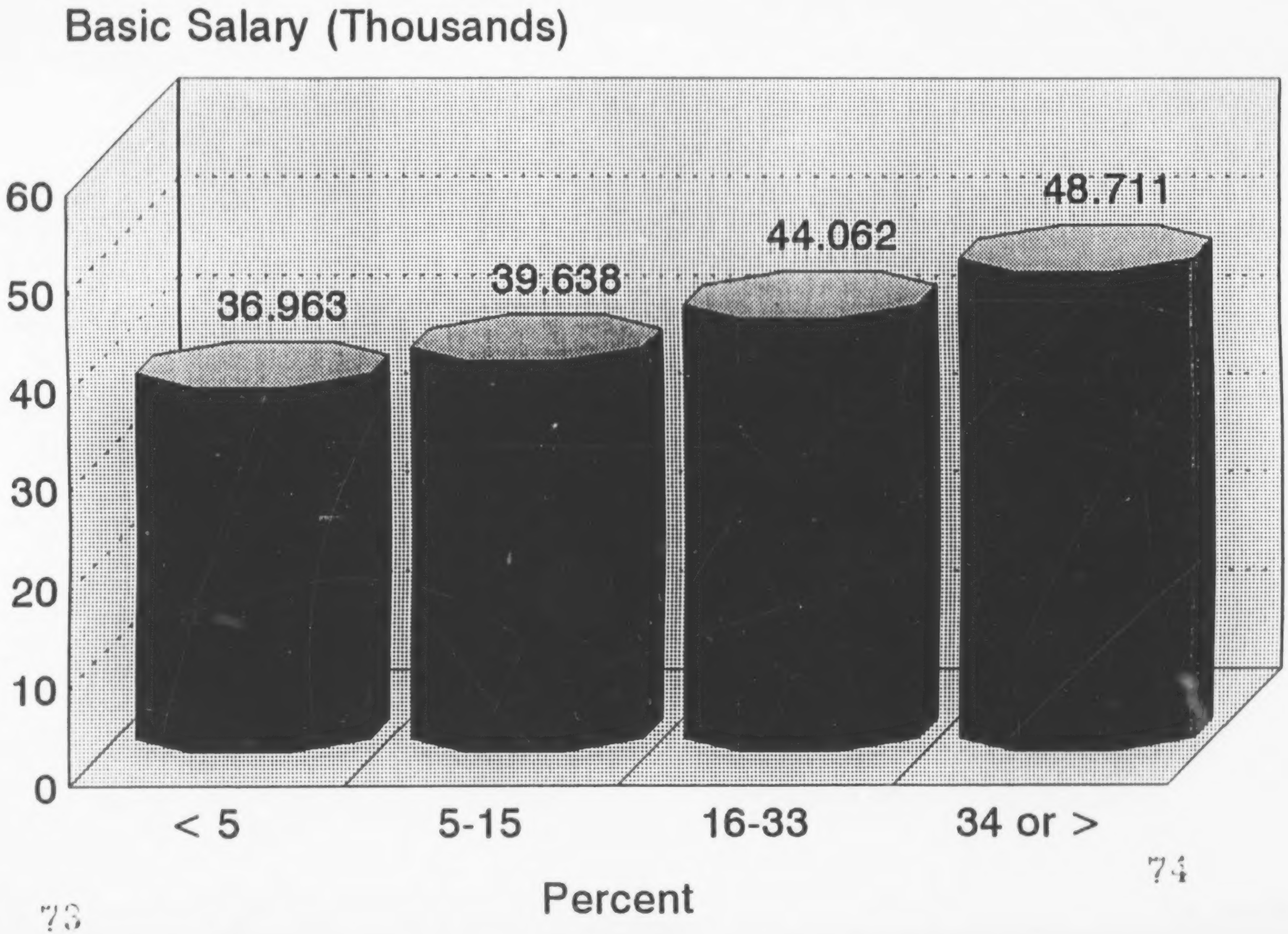
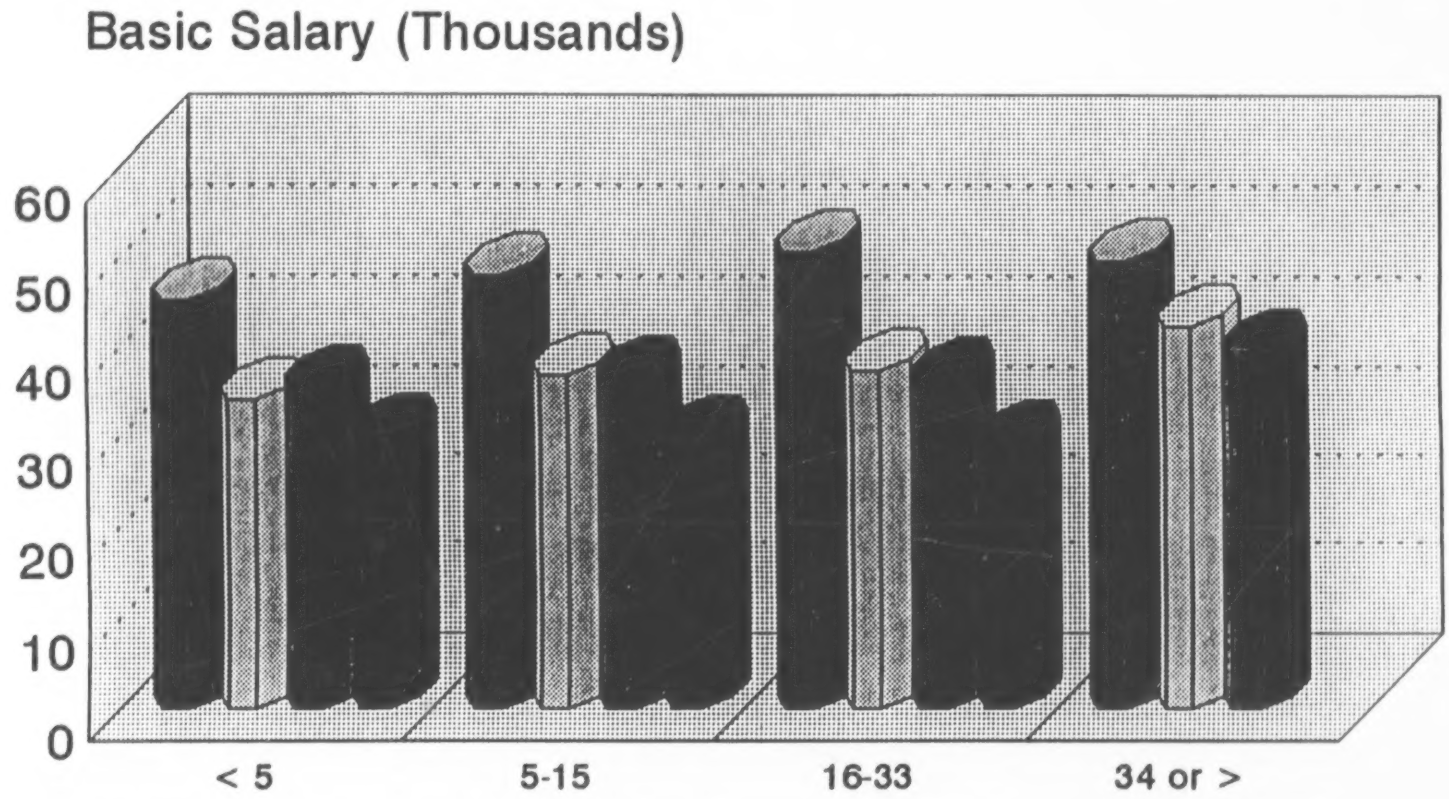


Figure # 17

Percent of Time, Research/Scholarship

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 5	5-15	16-33	34 or >
Research	■	45.581	48.384	50.99	50.06
Doctoral	☐	34.453	37.249	37.799	42.825
Comprehensive	■	35.805	36.974	36.711	40.044
Liberal Arts	■	30.389	30.281	29.615	

Percent

Figure # 18

Total Refereed Publications (Career)

For tenure-track, full-time faculty, the greater the career publications (including refereed journal articles, books, textbooks, monographs, chapters in edited volumes, and book reviews), the higher the compensation (see Figure 19). Faculty with more than 30 career publications earn an average basic salary of $56,183, whereas faculty with two or fewer publications earn $33,198 [t(2/2-10) = 7.04, $p < .001$; t(2-10/11-29) = 9.73, $p < .001$; t(11-29/30) = 15.78, $p < .001$].

This pattern does not vary by institutional type (see Figure 20): publications are as strongly related to compensation for faculty in liberal arts colleges and comprehensive institutions as it is for their compatriots in research and doctoral-granting universities.*

---

* Research universities: t(2-10/11-29) = 3.16, $p < .01$; t(11-29/30) = 10.83, $p < .001$.
Doctoral-granting universities: t(2/2-10) = 3.76, $p < .001$; t(2-10/11-29) = 4.01, $p < .001$; t(11-29/30) = 5.86, $p < .001$.
Comprehensive colleges and universities: t(2/2-10) = 3.21, $p < .01$; t(2-10/11-29) = 5.90, $p < .001$; t(11-29/30) = 4.23, $p < .001$.
Liberal arts colleges: t(2/2-10) = 4.75, $p < .001$; t(2-10/11-29) = 3.65, $p < .001$.
Other four-year institutions: t(2/2-10) = 4.09, $p < .001$; t(2-10/30) = 3.46, $p < .001$.

Number of Refereed Publications, Career

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

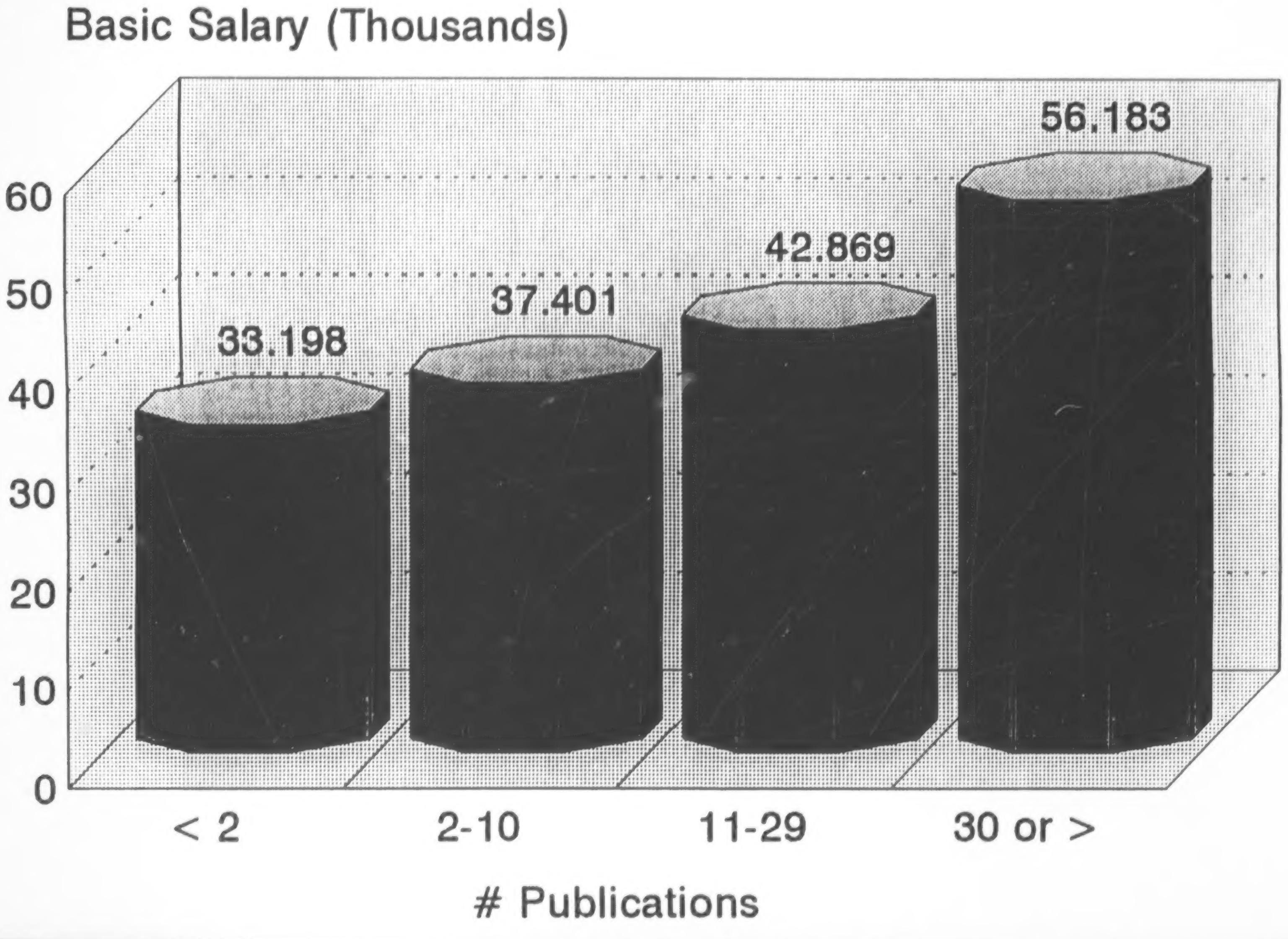
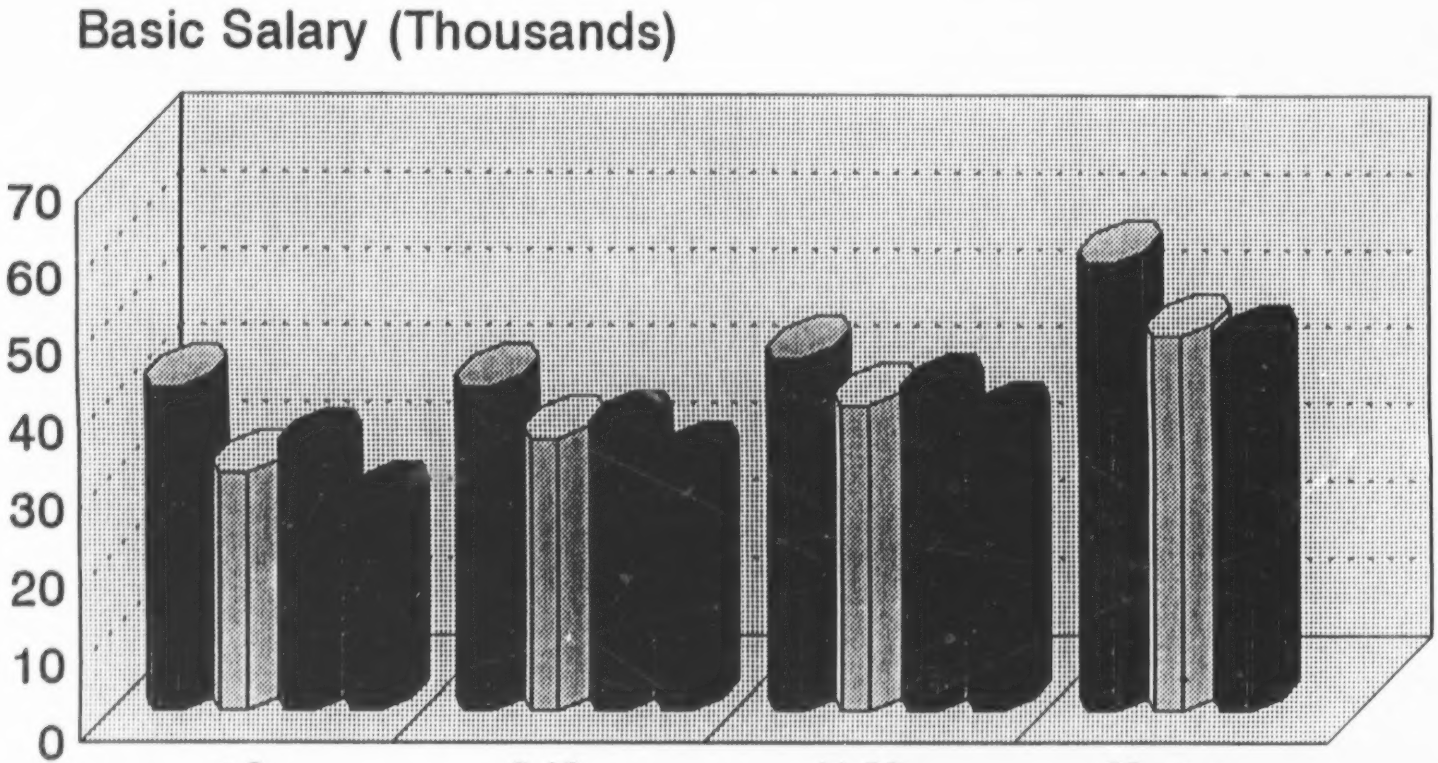


Figure # 19

Number of Refereed Publications, Career

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 2	2-10	11-29	30 or >
Research	■	41.676	41.783	45.519	58.082
Doctoral	□	30.562	35.066	39.415	48.465
Comprehensive	■	33.312	35.679	40.466	47.057
Liberal Arts	■	26.425	31.626	36.922	

# Publications

Figure # 20

Principal Investigator

Being a principal investigator on an externally-funded research project means earning a substantially higher basic salary, $51,517 versus $39,567 (see Figure 21) [t = 14.71, p < .001]. The same pattern holds true for faculty in research universities (t = 6.30, p < .001), doctoral-granting universities (t = 4.84, p < .001), comprehensive colleges and universities (t = 4.39, p < .001), and other four-year institutions (t = 3.25, p < .01). The relationship is not true for faculty in liberal arts colleges.

Administration and Service

Beyond teaching and research lie faculty responsibilities in administration and public service.

Percent of Time Spent on Administration

Faculty spending the greatest time on administration earn the highest basic salaries (see Figure 23) [t(5/5-9) = 2.51, p < .05; t(10-19/20) = 8.21, p < .001]. Percent of time spent on administration is not related to compensation for faculty in other four-year institutions; it is only weakly related to compensation for faculty in liberal arts colleges. Percent of time spent on administration is a strong, positive correlate of

Principal Investigator, Funded Research

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

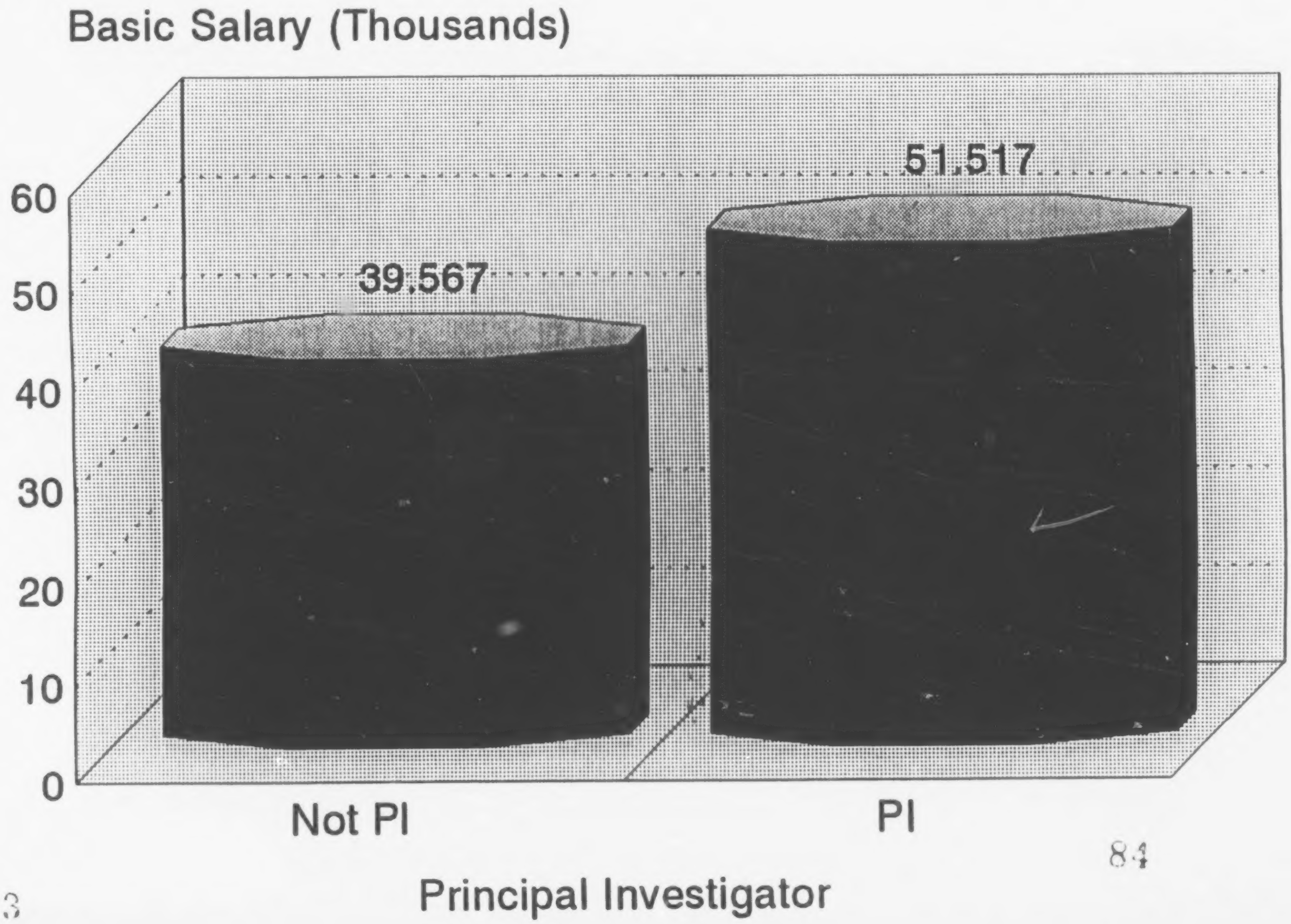
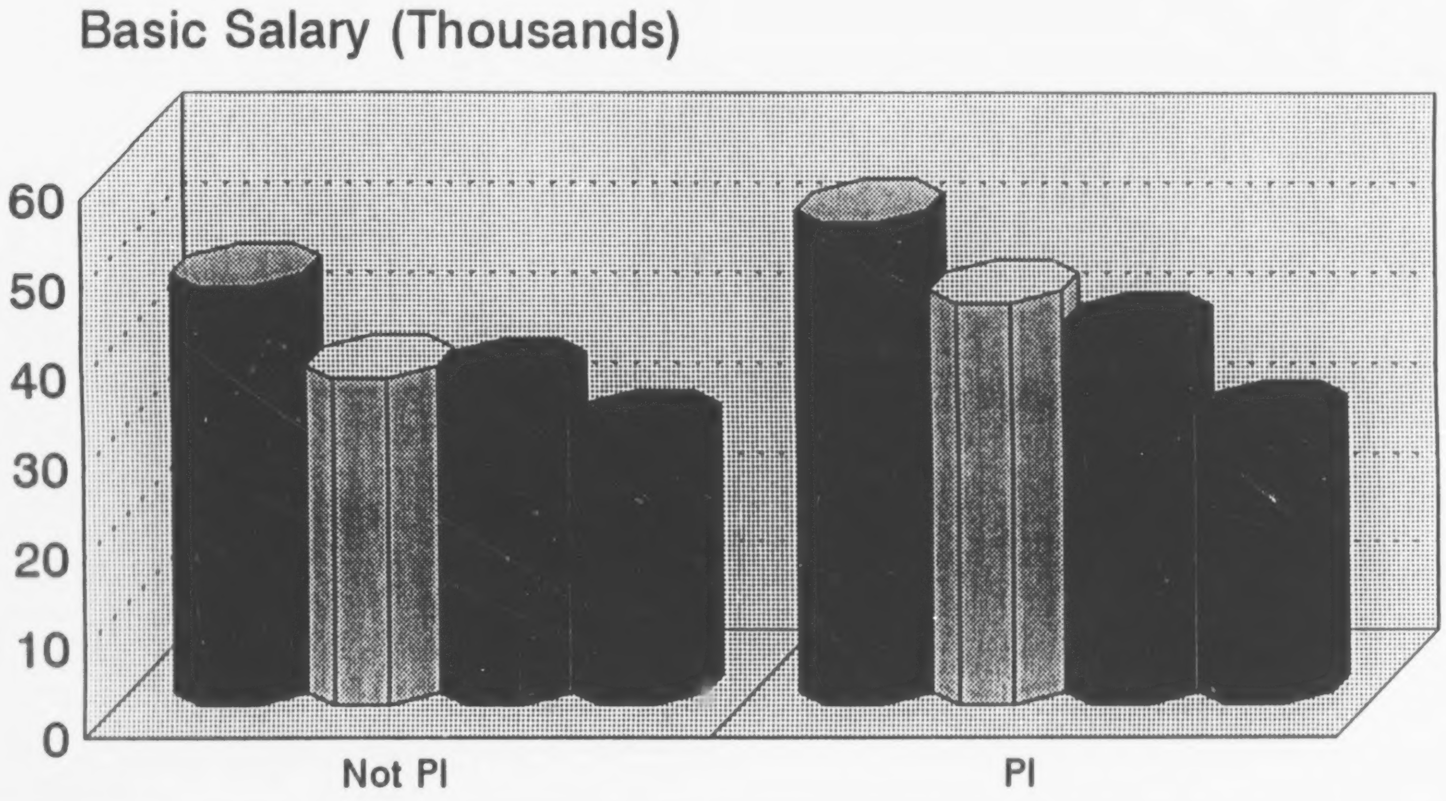


Figure # 21

Principal Investigator, Funded Research

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



	Not PI	PI
Research ■	46.779	53.98
Doctoral □	36.585	44.973
Comprehensive ■	36.273	41.364
Liberal Arts ■	30.536	31.572

Principal Investigator

Figure # 22

compensation for faculty in research univerisities, doctoral-granting institutions, and comprehensive colleges (see Figure 24).*

Percent of Time Spent on Public Service

Faculty who spend the most time on public service tend to make lower basic salaries (see Figure 25) [$t = -3.23$, $p < .01$]. There is no significant difference, however, when the relationship between public service and compensation is examined by type of institution (see Figure 26).

Summary

Univariate analyses and crosstabulations show negative relationships between several measures of teaching activity and productivity with basic salary, whereas the relationships between compensation and indicators of research activity and productivity are positive. These patterns hold true for faculty overall, and, in most cases, for faculty in each type of institution.

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* Research universities: $t(5/5\text{-}9) = 2.67$, $p < .01$; $t(5\text{-}9/10\text{-}19) = -2.36$, $p < .05$; $t(10\text{-}19/20) = 7.63$, $p < .001$).
Doctoral-granting universities: $t(5//10\text{-}19) = 2.47$, $p < .05$; $t(5/20) = 3.55$, $p < .001$).
Comprehensive colleges and universities = $t(10\text{-}19/20) = 6.42$, $p < .001$.

Percent of Time, Administration

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

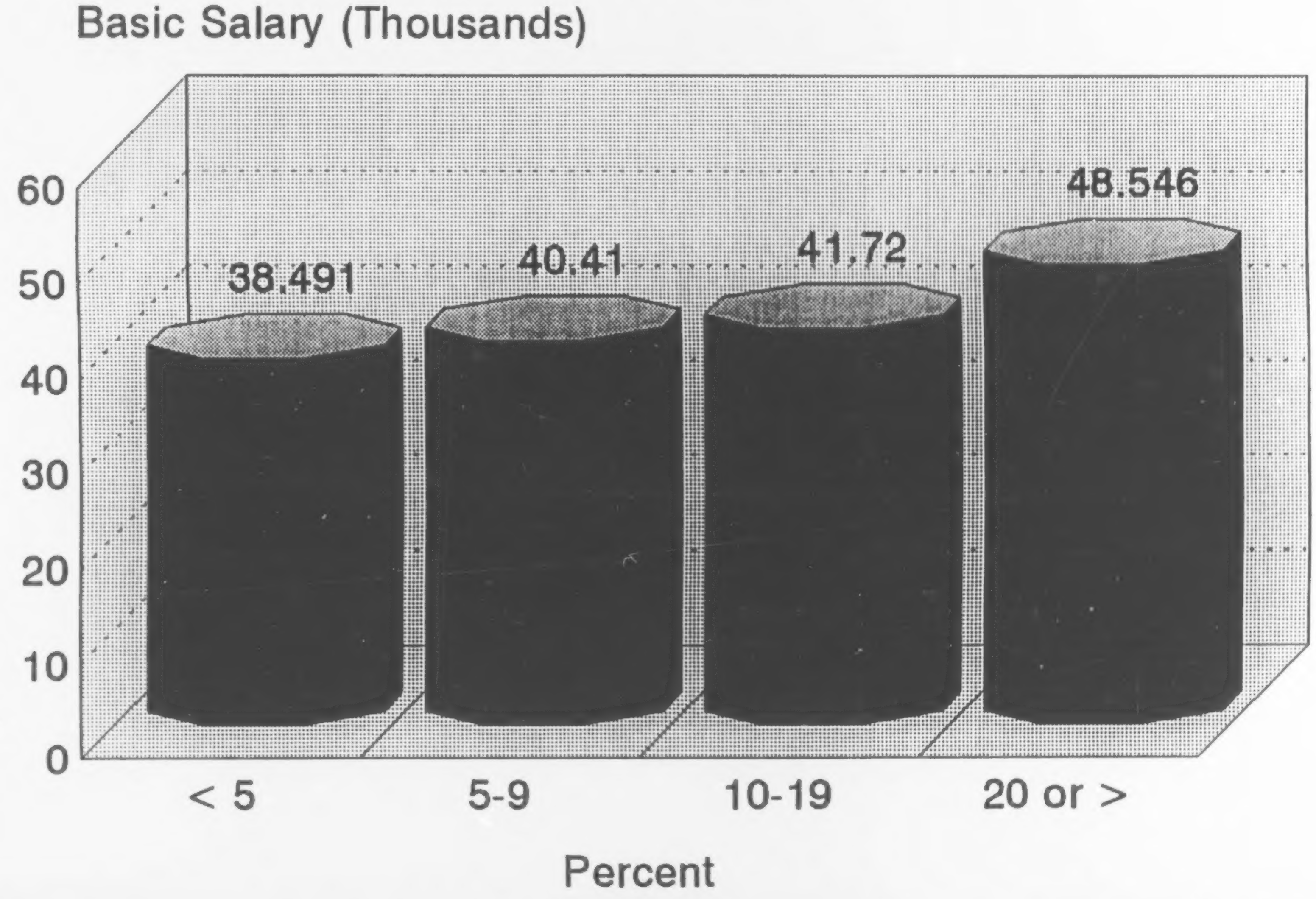
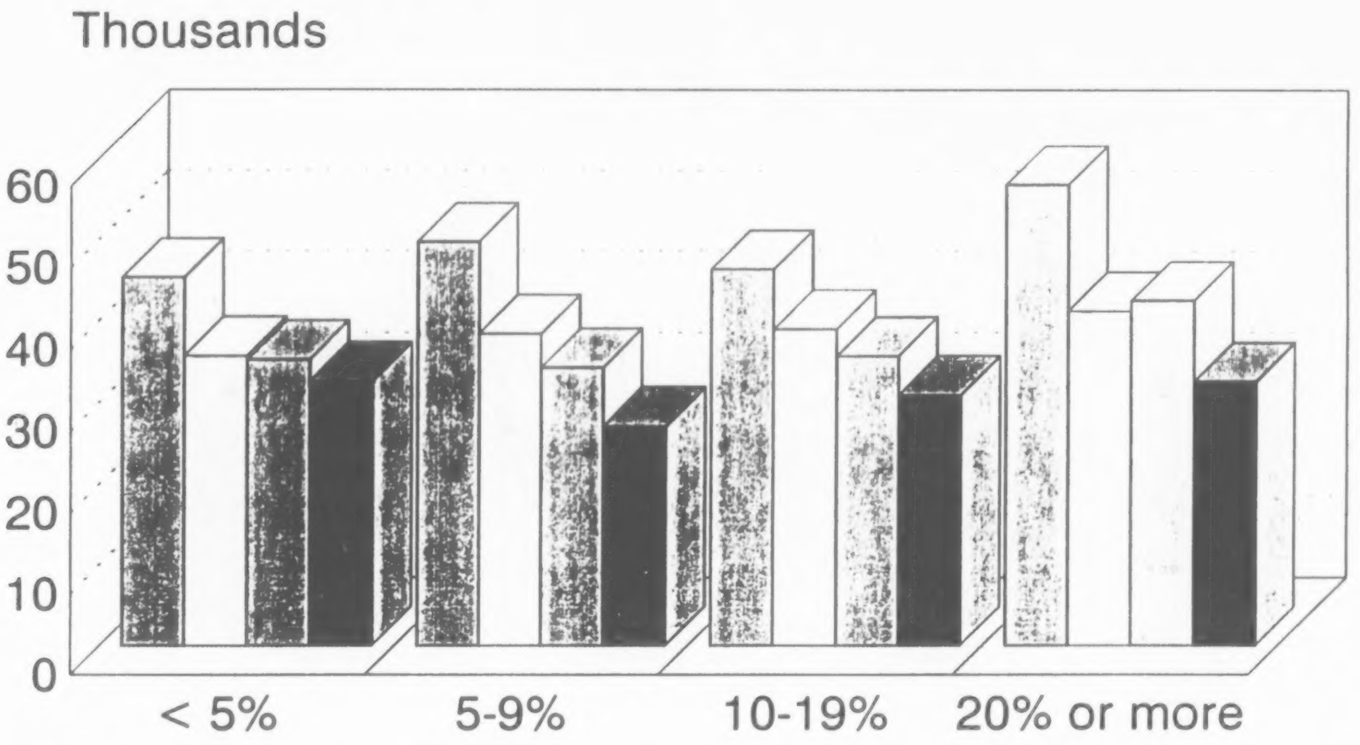


Figure # 23

Percent of Time, Administration

Mean Income for Tenure Track, Full-Time Faculty: Fall 1987



	< 5%	5-9%	10-19%	20% or more
Research ▨	45.214	49.569	46.2	56.694
Doctoral ☐	35.608	38.257	38.83	41.026
Comprehensive ░	35.137	34.154	35.522	42.315
Liberal Arts ■	32.517	27.012	30.782	32.43

Percent

Figure 24

Percent of Time, Public Service

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

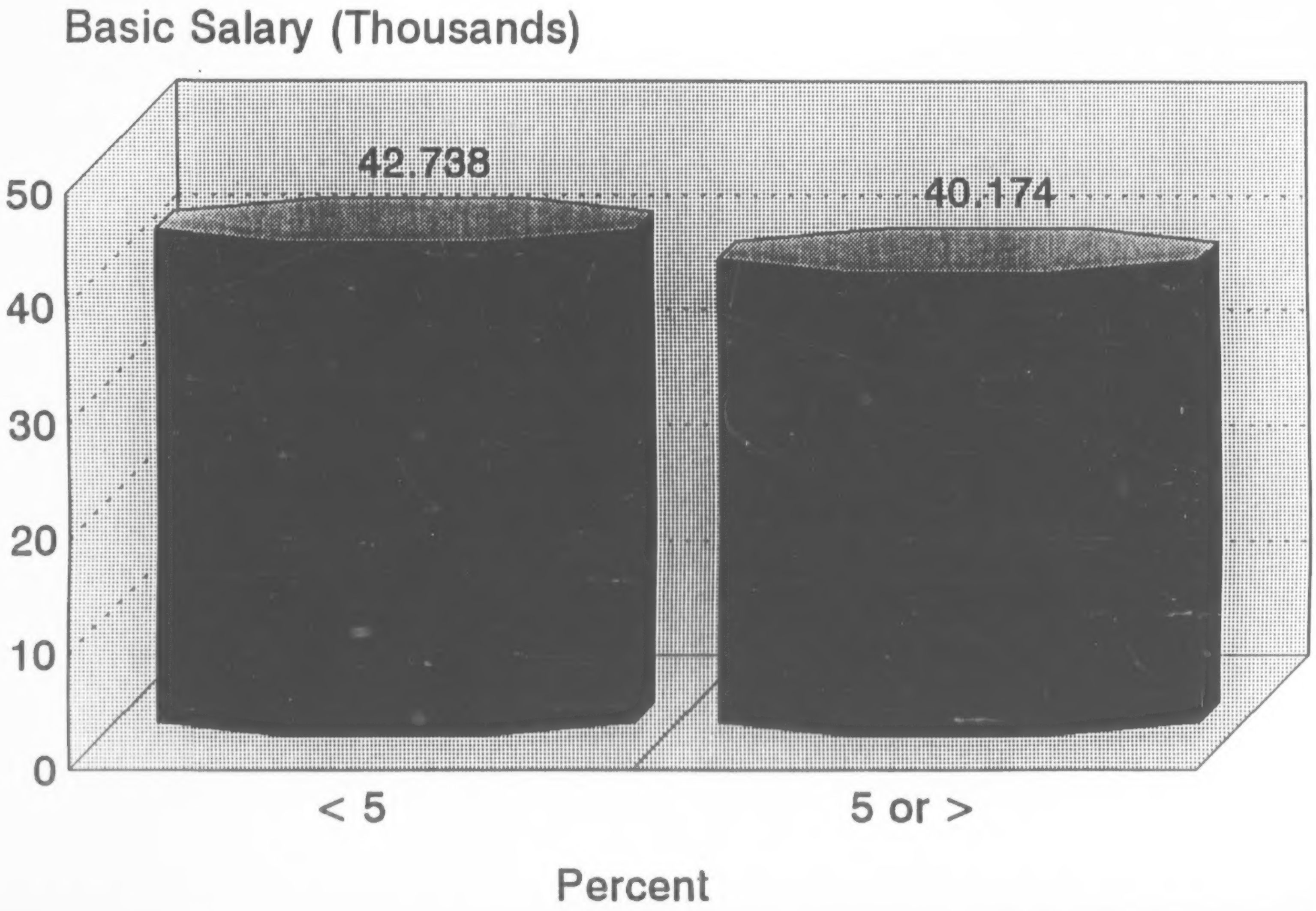
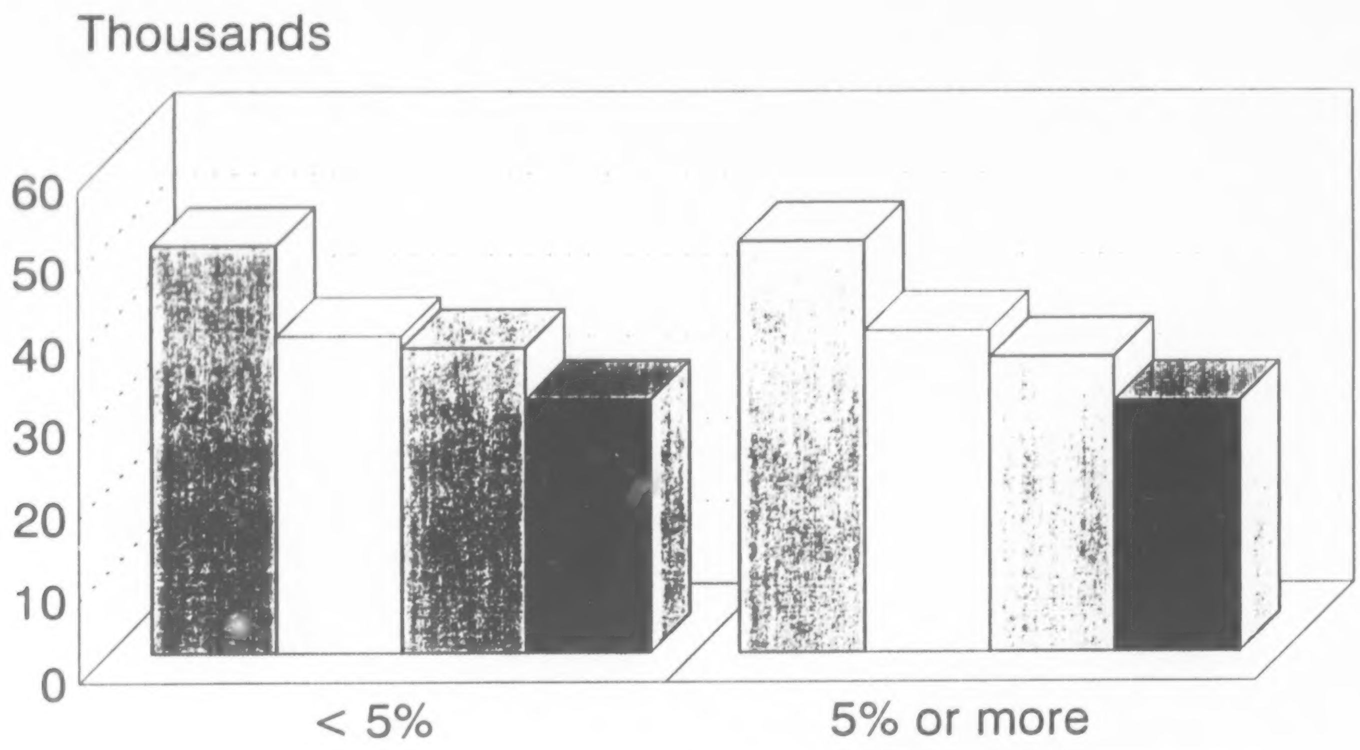


Figure # 25

Percent of Time, Public/Community Service

Mean Income for Tenure Track, Full-Time Faculty: Fall 1987



	< 5%	5% or more
Research ▨	49.609	50.12
Doctoral □	38.416	38.998
Comprehensive ▨	36.952	35.768
Liberal Arts ■	30.655	30.388

Percent

Figure 26

Combined Relationships between Faculty Salary, Demographics, Activities, and Productivity

Although highly suggestive, univariate analyses of the relationship between faculty demographics, activities, and workload with compensation can be misleading. Relationships between years of service and compensation may be influenced, for example, by academic rank. The next set of analyses explores the combined relationships between faculty demographics and behavior with compensation to determine their relative importance in faculty salaries. First, the intercorrelations between compensation and faculty activities are described. Second, the results of a principal components analysis, which was carried out to combine highly correlated indicators into composites, are examined. Finally, multiple regression models using basic salary as the criterion are examined, focusing on results by type of institution, program area, and academic rank within type of institution.

Intercorrelations for Faculty Activities with Compensation

Intercorrelations between faculty activities nad compensation are shown in Table 5. The correlations indicate that time spent on teaching is negatively related to compensation overall and for each type of institution except liberal arts colleges. Correlational analyses also support the finding that teaching only graduate students is positively related to compensation, overall and by type of institution. Unlike the univariate analyses, correlations indicate that hours per week spent in the classroom, student contact hours, and teaching only undergraduate students are only marginally related to basic salary.

Consistent with univariate analyses, correlations indicate that refereed publications are strongly, positively related to compensation, overall and by type of institution. Also positively related to compensation are time spent on research and being a principal investigator on an externally-funded research project, although the correlations are not as strong as those for career publciations.

Consistent with univariate analyses, percent time spent on administration is, for the most part, positively related with compensation. Time spent on service is unrelated to compensation, except at other four-year institutions where it is negatively related to compensation.

Principal Components

Table 6 presents means and variances for study variables. Figure 27 shows the intercorrelation matrix for these variables. High correlations between age, time in rank, and years at current institution, and between perscent of time spent on teaching and research, suggested the need to create composites prior to proceeding with multiple regression analyses. A principal components analysis with an oblique rotation successfully combined highly correlated indicators while preserving separate indicators for other measures (see Table 7). Two composites were created. The first

Table 5:

Correlations between faculty activities, productivity, and income from institution, by type of institution: All tenure-track, tenure-track, full-time faculty: Fall 1987

	Basic salary	Total institutional income
Percent of time on teaching/ instruction		
All institutions	-.43	-.38
Research	-.34	-.31
Doctoral	-.27	-.28
Comprehensive	-.33	-.33
Liberal arts	-.06	-.10
Other 4-year	-.41	-.32
Number of hours teaching in class, per week		
All institutions	-.07	-.03
Research	.06	.11
Doctoral	-.12	-.12
Comprehensive	-.07	.00
Liberal arts	-.14	-.10
Other 4-year	-.04	-.05
Student contact hours		
All institutions	.06	.08
Research	.06	.09
Doctoral	-.02	.01
Comprehensive	.04	.06
Liberal arts	.04	.05
Other 4-year	.02	-.02
Taught only undergraduate students		
All institutions	.03	.02
Research	-.03	-.04
Doctoral	.08	.10
Comprehensive	.10	.10
Liberal arts	.02	-.01
Other 4-year	-.10	.08

Table 5 (continued):

Correlations between faculty activities, productivity, and income from institution, by type of institution: All tenure-track, full-time faculty: Fall 1987

	Basic salary	Total institutional income
Taught only graduate students		
All institutions	.27	.21
Research	.19	.12
Doctoral	.26	.26
Comprehensive	.33	.30
Liberal arts	----	----
Other 4-year	-.04	-.07
Percent of time on research/ scholarship		
All institutions	.21	.17
Research	.04	.01
Doctoral	.16	.14
Comprehensive	.06	.07
Liberal arts	.13	.17
Other 4-year	.10	.05
Number of refereed publications, career		
All institutions	.42	.35
Research	.38	.27
Doctoral	.32	.33
Comprehensive	.23	.24
Liberal arts	.32	.31
Other 4-year	.35	.26
Principal investigator on research project, Fall 1987		
All institutions	.27	.23
Research	.18	.13
Doctoral	.24	.26
Comprehensive	.12	.13
Liberal arts	.03	.07
Other 4-year	.32	.23

Table 5 (concluded):

Correlations between faculty activities, productivity, and income from institution, by type of institution: All tenure-track, full-time faculty: Fall 1987

	Basic salary	Total institutional income
Percent of time on administration		
All institutions	.22	.16
Research	.20	.11
Doctoral	.10	.13
Comprehensive	.34	.34
Liberal arts	.05	.03
Other 4-year	.28	.22
Percent of time on service		
All institutions	-.07	-.07
Research	-.02	-.05
Doctoral	.01	.03
Comprehensive	-.02	-.01
Liberal arts	-.08	-.03
Other 4-year	-.19	-.17

was "seniority," which combined age, time in rank, and years at the current institution into a single scale. The second was derived from the finding that time spent are research and on teaching are inseparable--the more faculty spend on one activity, the less they spend on the other. The second composite--"more research/less teaching"--reflected this "exchange" relationship. A postive correlation between compensation and "more research/less teaching" indicates a positive relationship between spending more time on research and less on teaching with compensation; a negative correlation indicates a positive relationship between spending more time on teaching and less on research with compensation.

To these composites an additional variable was added to take into account the relative status of program area as a source of income. "High paying field" was created to reflect the relative position of each program area compared with the national average faculty salary. Engineering and health sciences were scored "1" to reflect an above average salary. Scored a "0" were program areas at the national average, including agriculture/home economics, business, and the natural sciences. Rated "-1" were program areas whose salaries were below the national average: education, fine arts, humanities, social sciences, and other fields.

Figure 28 presents the intercorrelation matrix for composites with compensation. These indicators, which show that the potential for

Table 6:

Means, standard deviations and standard errors for variables related to compensation, for tenure-track, full-time faculty: Fall 1987

	N	Wtd. N	Mean	SD	SE
Income					
Basic income from institution	4,332	329,946	42,498	18,845	286
Total income from institution	4,332	329,945	46,684	26,145	397
Demographic Characteristics					
High Paying Field (below average, average, above average)	4,481	343,343	-.383	.773	.012
Age	4,426	339,900	47.82	9.66	.145
Minority (yes/no)	4,393	337,240	.104	.306	.005
Male (yes/no)	4,480	343,209	.792	.406	.006
Job History					
Time in rank (years)	4,442	340,982	7.88	6.35	.095
Highest degree doctorate (yes/no)	4,481	343,343	.822	.383	.006
Years in current position	4,440	339,368	12.39	8.75	.131
Teaching-related Indicators					
Percentage of time spent teaching	4,399	337,915	.532	.238	.004
Student contact hours (semester)	4,268	321,934	322.26	496.29	7.597
Number of hours per week teaching in class	4,285	323,245	9.37	6.92	.106
Taught only undergraduate students (yes/no)	4,481	343,343	.084	.277	.004
Taught only graduate students (yes/no)	4,481	343,343	.117	.321	.005

Table 6 (concluded):

Means, standard deviations and standard errors for variables related to compensation, for tenure-track, full-time faculty: Fall 1987

	N	Wtd. N	Mean	SD	SE
Research-related Indicators					
Percent of time spent on research/scholarship	4,399	337,915	.220	.198	.003
Total number of publications during career	4,416	337,650	25.13	41.91	.631
Principal investigator on externally-funded project (yes/no)	4,481	343,343	.247	.431	.006
Administration-related Indicators					
Percent of time spent on administrative activities	4,399	337,915	.140	.152	.002
Service-related Indicators					
Percent of time spent on community/public service	4,399	337,915	.020	.040	.001

Table 7:

Composite Variables: Rotated Weights for Principal Components

Indicator	1	2	3	4	5
% time, teaching	.01	.00	-.01	-.01	-.83*
Student contact hours	.00	.00	.00	.00	.00
Hours in class/week	.00	.00	.00	.00	.00
Taught only undergrads	1.00*	.00	.00	.00	.00
Taught only grads	.00	.00	.00	.00	.00
% time, research	.01	.00	.00	-.01	.95*
Publications, career	.00	.00	.99*	.00	.00
Principal investigator	.00	.00	.00	.00	.00
% time, administration	.01	.00	-.01	.00	-.05
% time, service	.00	.00	.00	.00	-.01
Time in rank	.05	-.03	-.03	.01	.03
Age	-.03	.04	.14	-.04	-.08
Years in current job	-.01	.00	-.09	.03	.04
Male (yes/no)	.00	.00	.00	1.00*	.00
Highest degree--doctorate	.00	.00	.00	.00	.00

Minority (yes/no)	.00	1.00*	.00	.00	.00
Eigenvalue	2.80	2.54	1.46	1.26	1.10
% variance	17.5	15.9	9.1	7.9	6.9
Cumulative % variance	17.5	33.4	42.5	50.4	57.3

Components: 1 = taught only undergraduate students, 2 = minority faculty member, 3 = publications, 4 = male, 5 = more research/less teaching

* = Meaningful contributor to component

Table 7 (continued):

Composite Variables: Rotated Weights for Principal Components

Indicator	6	7	8	9	10
% time, teaching	-.41	-.04	.02	.02	.01
Student contact hours	.00	.00	.00	.00	.00
Hours in class/week	-.01	.00	.00	.00	.00
Taught only undergrads	.00	.00	.00	.00	.00
Taught only grads	-.01	1.00*	.00	.00	.00
% time, research	-.30	-.03	.02	.02	.01
Publications, career	.00	.00	.00	.00	.00
Principal investigator	.01	.00	.00	1.00*	.00
% time, administration	.99*	-.02	.01	.01	.00
% time, service	-.03	.00	.00	.00	.00
Time in rank	-.05	.01	.02	-.01	.88*
Age	.05	.02	.00	-.03	.85*
Years in current job	.01	-.02	-.01	.04	.91*
Male (yes/no)	.00	.00	.00	.00	.00
Highest degree--doctorate	.01	.00	1.00*	.00	.00
Minority (yes/no)	.00	.00	.00	.00	.00
Eigenvalue	1.00	.98	.93	.80	.67
% variance	6.2	6.1	5.8	5.0	4.2
Cumulative % variance	63.5	69.7	75.5	80.5	84.7

Components: 6 = percent time, administration, 7 = taught only graduate students, 8 = highest degree--doctorate, 9 = principal investigator, funded research, 10 = seniority

* = Meaningful contributor to component

Table 7 (concluded):

Composite Variables: Rotated Weights for Principal Components

Indicator	11	12	13
% time, teaching	-.03	-.01	-.11
Student contact hours	.00	1.00*	.00
Hours in class/week	1.00*	.00	.00
Taught only undergrads	.00	.00	.00
Taught only grads	.00	.00	.00
% time, research	-.03	-.01	-.08
Publications, career	.00	.00	.00
Principal investigator	.00	.00	.00
% time, administration	-.02	.00	-.04
% time, service	.00	.00	1.00*
Time in rank	-.03	.01	-.01
Age	.01	-.02	.03
Years in current job	.03	.01	-.02
Male (yes/no)	.00	.00	.00
Highest degree--doctorate	.00	.00	.00
Minority (yes/no)	.00	.00	.00
Eigenvalue	.66	.61	.42
% variance	4.1	3.8	2.6
Cumulative % variance	88.8	92.6	95.3

Components: 11 = hours in class/week, 12 = student contact hours, 13 = % time, service

* = Meaningful contributor to component

Figure 27
Correlation Matrix, original predictors: All Full-time, Tenure Track Faculty

Income	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Basic salary	1	.82	.28	-.02	.24	.25	.20	.21	-.43	.06	-.07	.03	.27	.21	.42	.27	.22	-.07	.26
2. Total income from institution		1	.18	-.02	.18	.22	.12	.13	-.38	.08	-.03	.02	.21	.18	.35	.23	.16	-.07	.25
Demographics																			
3. Age			1	-.08	.13	-.02	.69	.67	.08	-.04	-.02	-.03	-.01	-.14	.26	-.09	.07	.05	-.05
4. Minority (yes/no)				1	-.01	.01	-.09	-.11	.01	-.03	.00	.02	.03	.00	-.04	.01	-.04	-.01	.01
5. Male (yes/no)					1	.15	.19	.17	-.11	.06	-.01	.01	.07	.09	.16	.11	.01	-.01	.01
6. Highest degree doctorate (yes/no)						1	-.02	.00	-.26	.02	-.20	.02	.14	.26	.20	.18	.11	-.08	.06
7. Years in current job							1	.65	.09	.00	.00	-.01	-.03	-.10	.16	-.06	.02	.02	-.07
8. Time in current rank								1	.09	-.02	-.04	.02	-.03	-.09	.20	-.06	.00	.02	-.03
Activities																			
9. % time teaching									1	.06	.25	-.12	-.34	-.62	-.31	-.36	-.42	-.04	-.20
10. Student contact hours/semester										1	.45	.00	-.08	-.05	-.02	.06	-.07	.02	.09
11. Hours in class/week											1	-.22	-.22	-.25	-.14	-.12	-.14	.07	.07
12. Taught only undergraduates												1	-.11	.06	.04	.14	.16	.01	.07
13. Taught only graduates													1	.25	.19	.20	.14	-.10	.16
14. % time, research														1	.33	.41	-.18	-.16	.10
15. Total publications, career															1	.28	.03	-.08	.05
16. Principal investigator in in grant (yes/no)																1	.04	-.08	.24
17. % time, administration																	1	-.01	.01
18. % time, service																		1	-.06
Program Area																			
19. High paying field (low/average/high)																				1

multicollinearity was greatly reduced by creating "seniority" and "more research/less" teaching composites, were used in the multiple regression analyses.

Multiple Regression Analyses

Multiple regression analyses were carried out using basic salary as the criterion.* The regression models were highly predictive, accounting for the most part between .30 and .60 of the variance in basic salary across the various analyses. The results are presented by type of institution, program area, and academic rank within type of institution.

Type of Institution

Research universities.

Faculty who are paid the most focus their efforts on working with graduate students, conducting research (while spending less time on teaching activities), and publishing. Being a senior male in a high paying field also is positively related to compensation.

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* The results for total income from the institution were quite similar to those for basic salary. Total institutional income regression results are shown in Appendix G.

Figure 28

Correlation Matrix, composite variables: All full-time, tenure-track faculty

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Basic salary	1	.82	.29	-.03	.26	.25	-.06	.07	.04	.31	.33	.43	.27	.25	-.04	.26
2. Total income, institution		1	.23	-.03	.25	.25	-.02	.08	.05	.29	.33	.40	.28	.25	-.05	.25
3. Seniority			1	-.11	.19	.00	-.02	-.02	-.01	-.03	-.12	.24	-.08	.04	.04	-.03
4. Minority faculty member				1	-.02	.02	.01	-.03	.02	.01	.00	-.03	.00	-.04	-.02	.02
5. Male					1	.16	-.01	.06	.01	.07	.11	.15	.10	.03	-.01	.01
6. Highest degree doctorate						1	-.20	.02	.03	.15	.29	.19	.17	.11	-.06	.05
7. Hours in class/week							1	.45	-.22	-.21	-.28	-.14	-.11	-.13	.07	.07
8. Student contact hours								1	.01	-.07	-.06	-.02	.06	-.06	.02	.09
9. Taught only undergrads									1	-.12	.11	.04	.16	.17	.01	.10
10. Taught only grads										1	.35	.20	.20	.18	-.09	.19
11. More research/less teaching											1	.34	.41	.13	-.06	.13
12. Publications (career)												1	.26	.05	-.07	.03
13. Principal investigator													1	.04	-.07	.22
14. % time, administration														1	.06	.05
15. % time, service															1	-.05
16. High paying field																1

Doctoral-granting universities.

Highly paid faculty in doctoral-granting institutions have the same profile as their counterparts in research universities: emphasizing research and scholarship with a focus on graduate programs and publication, spending more time on research and less on teaching, spending time on administration, and being a senior male in a high paying field. Having an externally-funded grant is more strongly related to compensation in doctoral-granting universities than in research universities.

Comprehensive colleges and universities.

The predictors of compensation for faculty in comprehensive institutions are almost identical to the model for research university faculty, including the positive relationships between pay and emphasizing research, scholarship, and graduate programs.

Liberal arts colleges.

Faculty in liberal arts colleges who receive the most pay focus more on research and less on teaching, publish, and spend fewer hours in class per week. Being a senior, white male in a high paying field is also positively related to compensation, as is devoting some time to administration.

Table 8:

Multiple regression for basic salary, tenure-track, full-time faculty by type of institution: Fall 1987

Research Universities

R-square = .38

N (unweighted) = 1269

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	4592.60	397.97	.29	.0001
High paying field	5795.14	584.42	.24	.0001
% time, administration	4501.07	472.91	.22	.0001
Seniority	3830.03	472.20	.20	.0001
Taught only graduate students	1816.03	387.89	.12	.0001
Male	2243.66	492.53	.11	.0001
More research/less teaching	1802.00	547.16	.09	.001
Hours in class/week	1404.91	472.51	.08	.003

Table 8 (continued):

Multiple regression for basic salary, tenure-track, full-time faculty by type of institution: Fall 1987

Doctoral Universities

R-square = .41

N (unweighted) = 711

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4839.27	453.12	.35	.0001
Taught only graduate students	3890.22	600.00	.22	.0001
Publications (career)	2635.62	544.96	.16	.0001
Male	2107.18	409.72	.16	.0001
Highest degree-doctorate	2184.47	476.14	.14	.0001
High paying field	2581.19	587.19	.14	.0001
More research/less teaching	1943.50	567.96	.12	.001
Principal investigator, funded	1455.26	483.77	.10	.003
Hours in class/week	1536.83	694.86	.08	.03
% time, administration	941.48	451.07	.07	.04

Table 8 (continued):

Multiple regression for basic salary, tenure-track, full-time faculty by type of institution: Fall 1987

Comprehensive Universities

R-square = .47

N (unweighted) = 1491

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4658.10	272.83	.35	.0001
Taught only graduate students	5120.51	470.30	.23	.0001
High paying field	3687.09	371.19	.20	.0001
% time, administration	2416.32	279.88	.19	.0001
Highest degree-doctorate	1884.64	231.53	.17	.0001
Male	1691.00	243.23	.14	.0001
Publications (career)	2859.15	430.48	.13	.0001
More research/less teaching	1582.37	398.49	.09	.0001
Minority faculty member	775.57	242.00	.06	.001

Table 8 (continued):

Multiple regression for basic salary, tenure-track, full-time faculty by type of institution: Fall 1987

Liberal Arts Colleges

R-square = .47

N (unweighted) = 367

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5068.06	437.20	.48	.0001
More research/less teaching	3579.25	791.32	.20	.0001
Male	2058.39	430.58	.19	.0001
Publications (career)	5504.94	1211.31	.19	.0001
Highest degree-doctorate	1332.65	360.98	.15	.0003
Hours in class/week	-1839.74	735.24	-.13	.01
% time, administration	1369.93	540.43	.12	.01
High paying field	1905.38	765.52	.11	.01
Taught only undergraduates	-1032.43	500.45	-.10	.04
Minority faculty member	-934.28	465.99	-.08	.05

Table 8 (concluded):

Multiple regression for basic salary, tenure-track, full-time faculty by type of institution: Fall 1987

Other 4-year Institutions

R-square = .40

N (unweighted) = 115

Predictor	Beta	SE	Standardized Beta	P
	Significant			
% time, administration	10670.07	2968.77	.30	.0005
Taught only graduate students	-4764.04	1780.35	-.26	.009
Publications (career)	5389.00	2175.87	.26	.01
Principal investigator, funded	6319.93	2560.76	.25	.02

Other four-year institutions.

Faculty in other four-year institutions, which in this study are principally medical and engineering schools, are rewarded for publishing, bringing in grant money, and spending time on administration.

Summary.

The research and scholarship-oriented model dominates the reward structure *at each type of institution regardless of mission*, including comprehensive and liberal arts colleges which historically have emphasized undergraduate education. The most important demographic factors in predicting pay are seniority, gender (male), and field of study.

Program Area

Agriculture/home economics.

In addition to being a senior male who holds the doctorate, highly paid faculty in agriculture/home economics publish more than their counterparts and spend more time on administration.

Table 9:

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Agriculture/Home Economics

R-square = .58

N (unweighted) = 174

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	2401.89	805.73	.31	.0001
Principal investigator, funded	3382.42	790.72	.29	.0001
Male	2888.34	696.16	.25	.0001
% time, administration	3265.51	832.37	.24	.0001
Highest degree-doctorate	3267.60	981.16	.20	.001
Publications (career)	2158.00	950.42	.14	.02

Business

R-square = .43

N (unweighted) = 167

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	15592.50	3116.06	.37	.0001
Highest degree-doctorate	2447.69	989.54	.18	.01
Hours in class/week	-5386.99	2344.26	-.20	.02

Table 9 (continued):

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Education

R-square = .54

N (unweighted) = 370

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5443.10	466.70	.47	.0001
Publications (career)	5809.25	779.18	.31	.0001
Male	1480.31	378.69	.15	.001
Hours in class/week	-1871.43	643.94	-.14	.004
Highest degree-doctorate	1111.66	430.89	.10	.01
Student contact hours	3102.81	1367.34	.10	.02
% time, administration	998.41	440.00	.09	.02
Minority faculty member	792.96	403.39	.07	.05

Engineering

R-square = .44

N (unweighted) = 152

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	3044.83	803.57	.30	.0002
More research/less teaching	3715.70	1196.78	.28	.002
Publications (career)	3494.08	1161.73	.22	.003
Principal investigator, funded	1915.28	817.30	.18	.02

Table 9 (continued):

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Fine Arts

R-square = .38

N (unweighted) = 279

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4220.87	505.01	.43	.0001
Publications (career)	3823.06	1154.73	.17	.001
% time, administration	1726.99	549.015	.17	.002
Minority faculty member	1637.78	512.67	.16	.002
Highest degree-doctorate	1104.04	408.14	.15	.007
Taught only graduate students	2330.60	956.34	.13	.02

Health Sciences

R-square = .56

N (unweighted) = 220

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	15417.00	2089.94	.41	.0001
Male	6666.73	1362.85	.28	.0001
Taught only graduate students	4397.57	1013.08	.24	.0001
% time, administration	4897.33	1235.45	.20	.0001
Seniority	3936.07	1684.36	.12	.02

Table 9 (continued):

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Humanities

R-square = .51

N (unweighted) = 1020

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5688.70	285.98	.47	.0001
Hours in class/week	-3732.84	628.71	-.18	.0001
Publications (career)	2048.50	321.35	.15	.0001
% time, administration	1825.53	299.40	.15	.0001
Highest degree-doctorate	1721.04	306.92	.13	.0001
Student contact hours	4335.42	989.02	.12	.0001
% time, service	-1576.76	329.86	-.11	.0001
More research/less teaching	1583.09	422.13	.10	.0002
Taught only graduate students	1654.44	566.25	.07	.004
Male	724.24	261.54	.07	.006
Principal investigator, funded	1232.85	489.40	.06	.01

Table 9 (continued):

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Natural Sciences

R-square = .48 N (unweighted) = 481

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	3466.12	423.21	.32	.0001
Seniority	4655.53	551.92	.31	.0001
% time, administration	4456.63	633.89	.25	.0001
Principal investigator, funded	1709.99	549.30	.13	.002
More research/less teaching	1743.35	634.63	.13	.006
Taught only graduate students	1259.22	560.49	.09	.03

Social Sciences

R-square = .51 N (unweighted) = 680

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5527.76	389.16	.44	.0001
Publications (career)	3837.39	488.03	.26	.0001
% time, administration	1997.58	360.87	.17	.0001
More research/less teaching	1562.55	411.28	.12	.0002
Principal investigator, funded	1261.21	390.53	.09	.001
Highest degree-doctorate	1243.62	451.96	.08	.006
Hours in class/week	-1894.11	721.33	-.09	.009
Male	693.66	347.37	.06	.05

Table 9 (concluded):

Multiple regression for basic salary from institution, tenure-track, full-time faculty by program area: Fall 1987

Other Fields

R-square = .47

N (unweighted) = 295

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5829.50	810.07	.36	.0001
Publications (career)	2938.08	740.05	.20	.0001
More research/less teaching	3597.95	1062.00	.19	.0008
Student contact hours	6418.58	1641.73	.16	.001
Hours in class/week	-4846.67	1641.73	-.17	.003
Taught only graduate students	3395.88	1167.42	.14	.004
Highest degree-doctorate	2005.68	736.95	.13	.007

Business.

For business faculty, publications are positively related to compensation; spending more time in class per week is negatively related to compensation.

Education.

Senior male faculty in education are paid the most; being a member of an ethnic or racial minority and holding the doctorate are also positively related to compensation. Publishing is a strong, positive indicator of compensation. Spending fewer hours in class per week and generating more student contact hours per semester are positively related to compensation, suggesting that teaching a small number of large classes is reflected in higher salaries.

Engineering.

Engineering faculty are rewarded for doing more research and less teaching, publishing, and being a principal investigator on an externally-funded grant. Senior faculty are paid more than their junior counterparts.

Fine arts.

Seniority, holding the doctorate, and being a member of a racial or ethnic minority are positively related to compensation for faculty in the fine arts. Faculty who spend more time on administration, teach only graduate students, and publish also are likely to receive gerater pay than their colleagues who spend their time differently.

Health sciences.

Publishing and teaching only graduate students are positive predictors of basic salary for faculty in the health sciences. Also positively related to compensation are time spent on administration, seniority, and gender (male).

Humanities.

Demographic characteristics which are positively related to compensation for faculty in the humanities include seniority, gender (male), and holding the doctorate. Having more publications, spending more time on research and less on teaching, and teaching only graduate students are positively related to basic salary. Spending more hours in class per week is negatively related to compensation, whereas generating more student contact hours is positively related to the outcome. Spending time on administration is positively related to compensation, whereas spending time on public service is negatively related to pay.

Natural sciences.

Faculty in the natural sciences are rewarded for following a graduate-oriented research and scholarship behavioral model. Especially important are publishing, bringing in funded research projects, spending more time on research and less on teaching, and focusing on graduate instruction.

Social sciences.

Faculty in the social sciences who receive the highest pay follow virtually the same behavioral model as faculty in the natural sciences, focusing on publications, more research and less teaching, attaining funded research dollars, and spending less time in class. Seniority and gender (male) are also positively related to compensation.

Other fields.

Spending fewer hours in class while teaching more students is positively related to compensation for faculty in other fields. Also predictive of basic salary are publishing, spending more time on research and less on teaching, and teaching only graduate students. Seniority and holding the doctorate also are positively related to compensation.

Summary.

Publishing is the only positive predictor of compensation for each of the ten program areas. Indicators of research activity and graduate program emphasis are positively related to compensation in a variety of program areas: more research and less teaching (five fields), teaching only graduate students (four fields), being a principal investigator (three fields).

In contrast, teaching-related activities typically are either unrelated to compensation or negatively related to it. Hours spent in class per week is negatively related to compensation in one-half of the program areas, as is time spent on teaching (at the cost of time spent on research). Although student contact hours generated per semester is positively related to compensation in three fields, in each case hours spent in class is negatively related to income. This finding suggests that fewer hours in class spent teaching larger number of students is positively related to income in three fields of study.

Seniority is a positive predictor of basic salary in all but one program area. Being male is also positively related to compensation (four out of ten fields), as is holding the doctorate (four fields).

Academic Rank Within Type of Institution

An analysis of compensation by academic rank within type of institution is useful in controlling for seniority. The multiple regression results are shown in Table 10.

Research universities.

The highest paid professors in research universities have substantial publication records and teach only graduate students (see Table 10A). They also spend more time on administration and work in higher paying disciplines. Associate professors are rewarded for a more balanced set of activities. Although publishing, teaching graduate students, and spending a high proportion of time on research are important factors in compensation, so are hours spent in the classroom and service. In addition, being a principal investigator on a funded research project is negatively related to basic salary. The compensation of assistant professors, however, suggests early socialization in the research university model: publishing and teaching graduate students are the only significant behavioral predictors of compensation.

Doctoral-granting universities.

The three behavioral predictors of compensation for professors in doctoral-granting universities are teaching only graduate students, publishing, and attaining research funding (see Table 10B). As for research universities, associate professors in doctoral-granting instiututions display a more balanced reward structure. Although teaching graduate students and spending more time on research are related to compensation, so are hours spent in the class per week and time spent on

Table 10A:

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Research Universities

Professor

R-square = .24   N (unweighted) = 611

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	3256.76	469.35	.27	.0001
High paying field	6231.12	913.56	.26	.0001
% time, administration	3822.28	696.00	.22	.0001
Taught only graduate students	1804.45	594.91	.13	.003
Highest degree-doctorate	-2887.08	1175.70	-.09	.01

Associate Professor

R-square = .45   N (unweighted) = 367

Predictor	Beta	SE	Standardized Beta	P
	Significant			
High paying field	7022.68	996.02	.34	.0001
Hours in class/week	3226.32	616.73	.30	.0001
Publications (career)	9693.08	1585.15	.27	.0001
Taught only graduate students	1991.10	681.97	.13	.004
Principal investigator, funded	-2067.08	722.04	-.14	.004
More research/less teaching	2332.84	819.83	.13	.005
% time, service	1780.66	876.80	.09	.04
Highest degree-doctorate	2104.82	1040.83	.09	.04

Table 10A (concluded):

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Research Universities

Assistant Professor

R-square = .33

N (unweighted) = 276

Predictor	Beta	SE	Standardized Beta	P
	Significant			
High paying field	5407.66	906.11	.35	.0001
Publications (career)	8268.77	2527.55	.20	.001
% time, administration	2703.39	914.50	.16	.003
Male	1761.78	617.68	.15	.005
Seniority	-3270.89	1403.81	-.13	.02
Highest degree-doctorate	1950.83	918.35	.12	.03
Taught only graduate students	1190.29	584.60	.12	.04

administration. Two demographic characteristics are the only significant predictors of compensation for assistant professors: working in a high paying discipline and seniority.

Comprehensive colleges and universities.

The strongest predictors of basic salary for professors in comprehensive institutions are spending more time on research and less on teaching, publishing, and spending time on administration. Time spent on public service is negatively related to compensation. Seniority, working in a high paying field, and having a doctorate are also important. Hours spent per week in the classroom is positively, weakly related to basic salary (see Table 10C).

Demographic characteristics are strongly related to pay for associate professors--seniority, being in a high paying program area, and gender (male). Time spent on administration is positively related to compensation, as is time spent in providing service to the community. Hours spent in class is negatively related to compensation, while student contact hours is positively related (suggesting the benefits of teaching fewer but larger classes). No indicators of research or scholarly productivity are related to compensation.

The assistant professor rank tells a different story. Assistant professors who are paid the most teach only graduate students, spend more time on research and less on teaching, and participate in

Table 10B:

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Doctoral Universities

Professor

R-square = .21 N (unweighted) = 278

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Taught only graduate students	4354.23	996.27	.29	.0001
Seniority	3297.21	949.87	.21	.001
Principal investigator, funded	2308.11	953.25	.17	.02
Publications (career)	1483.18	746.29	.12	.05

Associate Professor

R-square = .45 N (unweighted) = 244

Predictor	Beta	SE	Standardized Beta	P
	Significant			
High paying field	5146.06	773.05	.35	.0001
Taught only graduate students	4522.60	977.86	.29	.0001
Male	2523.16	562.20	.23	.0001
% time, administration	2276.98	631.92	.21	.0004
Hours in class/week	4443.18	1277.17	.23	.001
More research/less teaching	2563.94	742.45	.22	.001
Highest degree-doctorate	2272.27	688.78	.18	.001
Seniority	2374.06	753.53	.17	.002

Table 10B (concluded):

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Doctoral Universities

Assistant Professor

R-square = .20

N (unweighted) = 174

Predictor	Beta	SE	Standardized Beta	P
	Significant			
High paying field	2268.32	992.20	.18	.02
Seniority	2246.09	1139.56	.17	.05

administrative activities. Seniority, gender (male), having the doctorate, and working in a high paying discipline also are positively related to compensation.

Liberal arts colleges.

Seniority, gender (male), holding the doctorate, and program area influence compensation for full professors in liberal arts colleges (see Table 10D). Behavioral indicators which are positively related to compensation include publishing and spending more time on research and less on teaching. For associate professors, spending fewer hours in class per week and spending more time on research are positively related to compensation. Spending time on administrative activities also is a positive predictor, as are gender (male) and working in a high paying field. Assistant professors who publish, spend fewer hours in class teaching larger numbers of students, and who are not members of a racial or ethnic minority are paid the most.*

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* The number of respondents in other four-year institutions was insufficient to carry out analyses by rank within type of institution.

Table 10C:

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Professor

R-square = .34   N (unweighted) = 638

Predictor	Beta	SE	Standardized Beta	P
	Significant			
High paying field	3896.46	545.88	.25	.0001
More research/less teaching	3601.57	591.15	.23	.0001
Taught only graduate students	3248.14	669.20	.17	.0001
Seniority	2236.56	446.32	.17	.0001
Publications (career)	1870.25	432.94	.15	.0001
% time, administration	1278.02	349.72	.14	.0003
% time, service	-1222.69	349.40	-.12	.0005
Highest degree-doctorate	1098.69	460.57	.08	.02
Hours in class/week	934.26	425.98	.09	.03

Table 10C (continued)

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Associate Professor

R-square = .25   N (unweighted) = 452

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	2172.19	396.54	.26	.0001
High paying field	2368.04	476.04	.22	.0001
% time, administration	1448.66	354.83	.21	.0001
Male	1078.05	287.42	.16	.0002
Hours in class/week	-1589.90	535.35	-.15	.003
Taught only graduate students	-1691.89	602.32	-.13	.005
Minority faculty member	759.84	295.53	.11	.01
% time, service	709.67	279.20	.11	.01
Student contact hours	1380.26	692.81	.09	.05
Taught only undergraduates	780.69	397.98	.09	.05

Table 10C (concluded)

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Assistant Professor

R-square = .35 N (unweighted) = 358

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Taught only graduate students	6631.22	843.92	.38	.0001
High paying field	3114.76	535.66	.28	.0001
Seniority	2604.35	516.30	.25	.0001
% time, administration	-2096.88	739.48	-.14	.005
Male	941.90	333.22	.13	.005
Highest degree-doctorate	777.27	331.42	.12	.02
More research/less teaching	1295.19	561.18	.12	.02

Table 10D:

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Liberal Arts Colleges

Professor

R-square = .50 N (unweighted) = 146

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Male	5490.56	1162.13	.34	.0001
Seniority	4972.54	1044.94	.33	.0001
More research/less teaching	5634.14	1423.37	.30	.0001
Taught only undergraduates	-3667.17	962.56	-.31	.0002
Publications (career)	8052.82	2107.61	.29	.0002
Highest degree-doctorate	2177.02	789.22	.19	.007
High paying field	3201.10	1345.62	.17	.02
% time, service	-2504.06	1185.85	-.15	.04

Associate Professor

R-square = .51 N (unweighted) = 109

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Male	1405.83	407.45	.27	.001
Hours in class/week	-2695.09	881.21	-.32	.003
High paying field	2417.10	864.25	.25	.006
More research/less teaching	2229.76	884.26	.24	.01
% time, administration	1564.55	694.89	.25	.03

Table 10D (concluded):

Multiple regression for basic salary, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Liberal Arts Colleges

Assistant Professor

R-square = .36

N (unweighted) = 103

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Minority faculty member	-2665.84	771.76	-.34	.001
Publications (career)	17847.00	5894.54	.38	.003
Student contact hours	10694.00	3754.31	.39	.006
Hours in class/week	-3195.80	1191.48	-.41	.009
Seniority	3618.67	1494.19	.24	.02

Summary.

The analyses of compensation by academic rank within type of institution show a more varied picture of the reward structure than the univariate analyses. Full professors in each type of institution, including comprehensive colleges and liberal arts colleges, are rewarded for publishing, and for spending more time on research and less on teaching. The associate professor rank shows a more balanced reward structure for research universities, doctoral-granting institutions, and comprehensive colleges and universities. In these three types of institutions, associate professors are rewarded for research, administration, teaching, and, in one case, service. Teaching remains a negative factor in compensation for associate professors in liberal arts colleges.

The earliest point of socialization in the academic career--the assistant professor rank--shows the extent of the research model orientation in American postsecondary education. Producing a substantial publication record and spending more time on research and less on teaching are the dominant factors in compensation for assistant professors.

POLICY RECOMMENDATIONS

Demographic characteristics are important factors in faculty compensation. Seniority is related to pay and and probably should be because it reflects length of service to an institution or to a discipline. The relationship between program area and compensation reflects differences in the marketplace between fields such as engineering and health sciences, on the one hand, and the humanities and education on the other. In contrast to the apparent rationality of paying faculty more for length of service and for working in high demand fields of study, gender reflects an irrational and indefensible basis for compensation. In this research, women were consistently underpaid compared with their male counterparts.

The findings demonstrate the dominance of the research and scholarship-oriented reward structure for faculty in four-year colleges and universities. Regardless of institutional type or mission, and irrespective of program area, faculty who spend more time on research and who publish the most are paid more than their teaching-oriented colleagues. Univariate analyses show teaching as a negative factor in compensation, especially the percent of time spent on teaching and instruction. Research-related indicators, especially teaching graduate students, publishing, and spending time on research, are positively related to compensation.

Even when teaching productivity is positively related to compensation, the implications for instructional quality are not promising. Student contact hours generated are almost always positively related with compensation when faculty spend fewer hours in class per week. This finding indicates the financial benefits of teaching larger numbers of students but spending less time with them, hardly an approach likely to result in higher quality instruction (McKeachie,1986).

Multiple regression analyses by academic rank within type of institution show a more complex relationship between faculty behavior and compensation. Although research and scholarship remain important predictors of compensation, teaching is more often a neutral than a negative factor in compensation. A more balanced reward structure is evident for associate professors, where research, administration, and teaching are positively related to compensation. Research and scholarship continue to dominate the factors related to pay for full and assistant professors, however, regardless of institutional type.

The findings suggest that assistant professors in all types of institutions are socialized early to follow a research and scholarship model. Assistant professors in each type of institution except doctoral-granting universities are socialized to publish, teach graduate students, and generally spend as little time teaching as possible. The results also demonstrate "institutional drift," which is reflected in a reward structure where the highest paid faculty in liberal arts colleges and in comprehensive colleges and universities follow a behavioral model virtually indistinguishable from their research university counterparts.

In conclusion, these results show virtually no support for teaching being a positive factor in compensation. Consistent with Marsh and Dillon (1980), univariate analyses show teaching as a negative factor in pay. Multivariate analyses more often portray teaching as a neutral factor in faculty compensation with research and scholarship as the positive indicators of pay (consistent with Tuckman, 1979; Tuckman, Gapinski, & Hagemann, 1977; Tuckman & Hagemann, 1976). In this context, attempts to make teaching the primary function of faculty life would be seen as a radical shift in faculty reward structures at virtually all institutions, even those with professed interests in undergraduate teaching. Yet even modest efforts at reform, such as attempts to revitalize undergraduate education (Boyer, 1987) or to restore a balance to teaching in the faculty reward structure (Bowen & Schuster, 1986) directly confront faculty reward structures which view research and publishing as the principal activity by which faculty should be judged.

These results suggest that Kasten (1984) was incorrect in her belief that the impact of research on the faculty reward structure would be constrained because the funding formulae for most colleges and universities were based on the number of students served rather than on research productivity. The nature of institutional funding has not seemed to constrain the role of research in faculty compensation at all. Kasten's speculation about the consequences of a faculty reward structure which did not maintain a balance between faculty roles, however, may be correct:

> Professional orientation becomes harmful when it entails loss of support from clients, governing bodies, and funding groups, many of whom are more likely to be familiar with the more locally visible aspects of faculty work (p. 512).

As academic institutions attempt to deal with severe financial constraints being placed on them by state legislatures, federal agencies, and parents who pay tuition for their children, it would be wise to examine the implicit (and sometimes explicit) messages given through compensation about how faculty should spend their time, and to address directly the relative importance of teaching and research in academic environments.

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Teaching and the Faculty Reward Structure:

Relationships between Faculty Activities and Compensation:

Appendices

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Appendix A

Mean income from institution for tenure-track, full-time faculty, by type of institution: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Research	49,648	56,088	121,053	1,426
SE	533	886		
Doctoral	38,478	41,744	48,172	765
SE	528	565		
Comprehensive	36,820	39,504	112,475	1,602
SE	335	371		
Liberal arts	30,628	32,474	26,921	406
SE	533	565		
Other 4-year	55,920	60,275	21,325	133
SE	2,403	2,847		

Appendix B1:

Mean income from institution for tenure-track, full-time faculty, by academic rank: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Professor	51,553	55,631	139,138	1,901
SE	440	485		
Associate	39,307	44,733	99,103	1,316
SE	434	928		
Assistant	32,202	35,389	81,897	1,004
SE	403	510		
Instructor/ Lecturer	25,389	27,064	7,860	89
SE	1,140	1,251		

Appendix B2:

Mean income from institution for tenure-track, full-time faculty, by age group: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 30	28,604	31,435	3,810	49
SE	1,918	2,295		
30-44	36,872	42,095	123,936	1,502
SE	423	829		
45-54	44,348	48,289	114,442	1,584
SE	499	556		
55-59	46,045	48,943	39,924	579
SE	615	672		
60-64	51,820	55,728	32,817	429
SE	1,002	1,096		
65 or over	48,548	50,430	15,017	189
SE	1,479	1,506		

Appendix B3:

Mean income from institution for tenure-track, full-time faculty, by gender: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Female	33,639	37,642	68,494	966
SE	430	1,088		
Male	44,819	49,053	261,451	3,366
SE	334	399		

Appendix B4:

Mean income from institution for tenure-track, full-time faculty, by racial/ethnic minority: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Nonminority	42,573	46,869	292,523	3,891
SE	305	429		
Minority	41,527	45,078	33,328	388
SE	859	1,046		

Appendix B5:

Mean income from institution for tenure-track, full-time faculty, by highest degree obtained: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Doctorate/Prof.	44,729	49,388	271,511	3,632
SE	320	455		
Masters	31,496	33,469	50,476	609
SE	450	499		
Bachelors/Other	36,158	38,276	7,959	91
SE	1,693	1,731		

Appendix B6:

Mean income from institution for tenure-track, full-time faculty, by time in rank: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 3 years	36,933	41,727	70,555	867
SE	613	1,228		
3-5 years	39,927	43,637	86,750	1,092
SE	549	624		
6-11 years	44,283	48,769	89,143	1,167
SE	593	752		
12 + years	47,966	51,814	83,497	1,206
SE	483	569		

Appendix B7:

Mean income from institution for tenure-track, full-time faculty, by years in current position at institution: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 4 years	35,964	39,584	71,220	841
SE	568	737		
4-7 years	41,116	48,028	53,290	619
SE	873	1,777		
8-14 years	44,127	47,740	70,406	877
SE	775	809		
15-19 years	44,923	48,983	59,234	787
SE	549	687		
20 + years	46,200	49,634	75,797	1,208
SE	429	486		

Appendix C1:

Mean income from institution for tenure-track, full-time faculty, by percent of time spent on teaching/instruction: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 35%	56,181	63,608	78,620	767
SE	914	1,464		
35-52%	42,935	47,312	86,069	1,135
SE	465	585		
53-71%	37,244	40,001	81,796	1,230
SE	357	387		
72% or more	34,307	36,645	83,461	1,200
SE	320	363		

Appendix C2:

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on teaching/instruction: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 35%	57,893	68,505	45,335	437
SE	1,131	2,247		
35-52%	47,445	52,029	40,901	495
SE	709	809		
53-71%	43,142	46,153	23,452	343
SE	817	879		
72% or more	38,113	41,659	11,364	151
SE	1,149	1,461		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 35%	46,349	50,067	8,411	126
SE	1,839	1,876		
35-52%	39,180	42,722	15,538	242
SE	875	972		
53-71%	36,008	39,067	14,991	239
SE	716	757		
72% or more	34,138	36,859	9,231	158
SE	903	1,017		

Appendix C2 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on teaching/instruction: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 35%	50,189	54,222	12,210	142
SE	2,067	2,340		
35-52%	37,814	40,844	22,255	313
SE	659	684		
53-71%	34,551	37,165	32,948	493
SE	423	459		
72% or more	34,366	36,566	45,063	654
SE	379	425		

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
< 35%	*	*		
SE	*	*		
35-52%	30,908	32,702	4,110	59
SE	1,283	1,452		
53-71%	30,672	32,518	6,749	126
SE	976	1,066		
72% or more	30,023	31,713	14,190	202
SE	708	697		

KEY

* = Too few cases for reliable estimate.

Appendix C2 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on teaching/instruction: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 35%	67,202	68,726	10,791	43
SE	4,639	4,692		
35-52%	54,345	72,531	3,266	26
SE	4,833	9,529		
53-71%	40,876	43,744	3,656	29
SE	2,184	2,741		
72% or more	38,869	40,684	3,613	35
SE	2,254	2,231		

Appendix C3:

Mean income from institution for tenure-track, full-time faculty, by number of hours per week teaching in class : Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 6	50,927	57,150	90,534	945
SE	732	1,180		
6-8	43,191	46,629	82,542	1,126
SE	488	537		
9-11	38,060	41,207	58,895	916
SE	503	557		
12 or more	36,793	40,353	97,975	1,345
SE	433	599		

Appendix C4:

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of hours per week teaching in class: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 6	53,239	60,908	54,588	554
SE	936	1,736		
6-8	48,100	52,363	39,761	535
SE	770	855		
9-11	40,845	46,187	11,677	175
SE	927	1,353		
12 or more	47,542	56,126	15,026	162
SE	1,612	3,016		

Doctoral Universities

< 6	43,558	47,083	10,551	154
SE	1,512	1,576		
6-8	38,679	41,973	15,112	222
SE	823	892		
9-11	36,706	39,320	10,904	205
SE	769	833		
12 or more	35,263	38,867	11,604	184
SE	1,092	1,194		

Appendix C4 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of hours per week teaching in class: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 6	45,162	48,012	13,745	160
SE	1,758	1,748		
6-8	38,817	41,247	19,266	260
SE	830	872		
9-11	36,181	39,206	26,399	408
SE	481	551		
12 or more	34,251	36,816	53,066	774
SE	385	481		

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
< 6	33,897	35,168	3,172	37
SE	2,176	2,297		
6-8	33,142	34,908	5,290	83
SE	1,295	1,421		
9-11	29,708	31,194	6,716	106
SE	1,023	1,052		
12 or more	29,139	31,382	11,743	180
SE	673	727		

Appendix C4 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of hours per week teaching in class: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 6	60,928	68,517	8,478	40
SE	3,924	5,712		
6-8	46,531	49,208	3,113	26
SE	3,232	3,431		
9-11	*	*		
SE	*	*		
12 or more	49,180	51,561	6,536	45
SE	4,121	4,225		

* = Too few cases for reliable estimate.

Appendix C5:

Mean income from institution for tenure-track, full-time faculty, by number of student contact hours per semester: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 110	49,267	55,260	95,114	1,072
SE	712	1,122		
110-217	38,442	41,721	79,147	1,117
SE	378	448		
218-359	37,632	40,356	77,029	1,178
SE	444	470		
360 or more	43,159	47,506	78,655	965
SE	602	789		

KEY

Student contact hours = number of hours per week teaching in class times the number of students taught.

Appendix C6:

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of student contact hours per semester: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 110	53,026	60,914	52,387	560
SE	954	1,778		
110-217	43,887	48,739	25,881	347
SE	729	943		
218-359	45,523	48,948	17,634	246
SE	1,144	1,210		
360 or more	51,433	58,603	25,151	273
SE	1,205	1,899		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 110	40,042	43,342	12,031	186
SE	1,326	1,401		
110-217	38,233	41,337	13,370	206
SE	871	965		
218-359	36,852	39,813	11,299	200
SE	894	946		
360 or more	38,726	42,443	11,472	173
SE	1,097	1,168		

Appendix C6 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of student contact hours per semester: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 110	42,758	45,313	15,992	202
SE	1,615	1,642		
110-217	36,225	38,774	27,820	404
SE	513	549		
218-359	35,076	36,677	37,829	582
SE	416	464		
360 or more	36,417	39,392	30,834	414
SE	583	753		

Liberal Arts Colleges

< 110	30,742	32,106	5,260	75
SE	1,472	1,576		
110-217	30,649	32,271	9,795	141
SE	852	877		
218-359	29,524	31,334	8,270	134
SE	775	872		
360 or more	32,945	36,187	3,595	56
SE	1,662	1,644		

Appendix C6 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of student contact hours per semester: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 110	61,512	68,823	9,443	49
SE	3,628	5,104		
110-217	*	*		
SE	*	*		
218-359	*	*		
SE	*	*		
360 or more	54,649	56,698	7,604	49
SE	3,833	3,846		

KEY

Student contact hours = number of hours per week teaching in class times the number of students taught.

* = Too few cases for reliable estimate.

Appendix C7:

Mean income from institution for tenure-track, full-time faculty, by whether or not faculty member taught only undergraduate or only graduate students: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Taught Only Undergraduate Students	44,176	48,821	27,857	339
SE	883	1,112		
Taught Grad/Undergrad Students	41,478	45,573	263,328	3,691
SE	287	411		
Taught Only Graduate Students	56,661	61,909	38,760	302
SE	1,365	1,522		

Appendix C8:

Mean income from institution for tenure-track, full-time faculty, by type of institution and whether or not faculty member taught only undergraduate or graduate students: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Taught Only Undergraduate Students	48,223	52,722	13,613	163
SE	1,402	1,517		
Taught Grad/Undergrad Students	48,785	55,310	82,821	957
SE	545	983		
Taught Only Graduate Students	57,118	63,821	24,619	206
SE	1,742	1,966		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
Taught Only Undergraduate Students	42,002	46,579	4,308	64
SE	1,627	1,861		
Taught Grad/Undergrad Students	37,795	40,973	40,680	665
SE	533	572		
Taught Only Graduate Students	52,914	56,815	3,184	36
SE	3,072	2,879		

Appendix C8 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and whether or not faculty member taught only undergraduate or graduate students: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Taught Only Undergraduate Students	42,129	45,194	6,780	83
SE	1,351	1,450		
Taught Grad/Undergrad Students	36,238	38,917	102,020	1,488
SE	316	356		
Taught Only Graduate Students	61,210	63,481	3,675	31
SE	5,824	5,911		

Liberal Arts Colleges

Taught Only Undergraduate Students	31,296	31,927	2,330	25
SE	2,793	2,886		
Taught Grad/Undergrad Students	30,565	32,526	24,590	382
SE	533	567		
Taught Only Graduate Students	------	------		
SE	------	------		

Appendix C8 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and whether or not faculty member taught only undergraduate or graduate students: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Taught Only Undergraduate Students	*	*		
SE	*	*		
Taught Grad/Undergrad Students	54,457	56,881	13,218	99
SE	2,495	3,236		
Taught Only Graduate Students	54,457	56,881	7,283	29
SE	2,495	3,236		

KEY

* = Too few cases for reliable estimate.

Appendix D1:

Mean income from institution for tenure-track, full-time faculty, by percent of time spent on research/scholarship: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	36,963	39,065	62,215	800
SE	549	570		
5.0-15.0%	39,638	43,034	103,376	1,441
SE	475	5[illegible]		
16.0-33.0%	44,062	50,636	81,992	1,133
SE	588	1,134		
34.0% or more	48,711	53,087	82,363	958
SE	620	706		

Appendix D2:

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on research/scholarship: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	45,581	48,377	9,302	102
SE	2,129	2,207		
5.0-15.0%	48,384	52,960	24,680	294
SE	1,220	1,336		
16.0-33.0%	50,990	61,298	35,653	450
SE	1,043	2,391		
34.0% or more	50,060	55,371	51,418	580
SE	736	905		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 5%	34,453	37,003	7,363	111
SE	1,070	1,195		
5.0-15.0%	37,249	41,074	13,673	217
SE	737	847		
16.0-33.0%	37,799	40,920	14,224	247
SE	929	990		
34.0% or more	42,825	46,065	12,911	190
SE	1,326	1,370		

Appendix D2 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on research/scholarship: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	35,805	37,740	32,210	413
SE	515	533		
5.0-15.0%	36,974	40,011	48,811	717
SE	571	642		
16.0-33.0%	36,711	39,461	22,883	337
SE	670	751		
34.0% or more	40,044	43,364	8,572	135
SE	1,220	1,307		

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
< 5%	30,389	31,829	9,390	137
SE	943	979		
5.0-15.0%	30,281	32,138	11,757	178
SE	789	772		
16.0-33.0%	29,615	31,790	4,332	72
SE	1,191	1,495		
34.0% or more	*	*		
SE	*	*		

KEY

* = Too few cases for reliable estimate.

Appendix D2 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on research/scholarship: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	46,424	48,990	3,949	37
SE	4,946	4,983		
5.0-15.0%	52,394	55,940	4,455	35
SE	5,356	5,725		
16.0-33.0%	58,935	70,119	4,900	27
SE	4,089	7,592		
34.0% or more	60,713	62,226	8,021	34
SE	4,480	4,507		

Appendix D3:

Mean income from institution for tenure-track, full-time faculty, by number of refereed publications (career): Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 2	33,198	35,991	75,417	934
SE	480	559		
2-10	37,401	40,291	92,840	1,301
SE	355	397		
11-29	42,869	46,612	77,979	1,110
SE	436	497		
30 or more	56,183	63,478	83,709	987
SE	735	1,240		

KEY

Refereed publications include refereed journal articles, books, textbooks, monographs, chapters in edited volumes, and book reviews.

Appendix D4:

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of refereed publications (career): Fall 1987

	Basic from inst.	Total inst. income	Weighted N	N
Research Universities				
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 2	41,676	47,422	11,461	114
SE	1,916	2,600		
2-10	41,783	45,544	23,941	286
SE	921	1,040		
11-29	45,519	50,154	35,235	446
SE	740	869		
30 or more	58,082	67,213	50,415	580
SE	894	1,815		
Doctoral Universities				
< 2	30,562	33,220	10,161	139
SE	936	1,082		
2-10	35,066	37,909	13,215	217
SE	745	794		
11-29	39,415	42,766	13,491	228
SE	787	843		
30 or more	48,465	52,668	11,305	181
SE	1,329	1,367		

Appendix D4 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of refereed publications (career): Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 2	33,312	35,546	39,223	497
SE	619	631		
2-10	35,679	38,339	41,524	609
SE	402	441		
11-29	40,466	43,423	21,219	343
SE	705	775		
30 or more	47,057	50,971	10,508	153
SE	1,390	1,818		

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
< 2	26,425	28,457	11,638	155
SE	732	797		
2-10	31,626	33,118	9,510	158
SE	815	857		
11-29	36,922	38,969	4,258	70
SE	1,199	1,233		
30 or more	*	*		
SE	*	*		

Appendix D4 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and number of refereed publications (career): Fall 1987

Other 4-Year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 2	34,544	36,762	2,934	29
SE	2,005	2,103		
2-10	48,678	52,115	4,649	31
SE	2,819	3,536		
11-29	*	*		
SE	*	*		
30 or more	67,574	73,441		
SE	4,672	5,624		

KEY

Refereed publications include refereed journal articles, books, textbooks, monographs, chapters in edited volumes, and book reviews.

* = Too few cases for reliable estimate.

Appendix D5:

Mean income from institution for tenure-track, full-time faculty, by status as principal investigator on research project: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Not principal investigator	39,567	43,232	249,032	3,535
SE	284	419		
Principal investigator	51,517	57,309	80,913	797
SE	761	953		

Note: Principal investigator on a grant funded by any external agency but not by the institution (e.g., federal or state governments, foundations, industry).

Appendix D6:

Mean income from institution for tenure-track, full-time faculty, by type of institution and status as principal investigator on research project: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Not principal investigator	46,779	52,622	72,822	984
SE	625	1,146		
Principal investigator	53,980	61,320	48,231	442
SE	957	1,355		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
Not principal investigator	36,585	39,552	37,299	619
SE	478	521		
Principal investigator	44,973	49,262	10,873	146
SE	1,667	1,722		

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
Not principal investigator	36,273	38,855	100,396	1,454
SE	349	388		
Principal investigator	41,364	44,903	12,080	148
SE	1,107	1,144		

Appendix D6 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and status as principal investigator on research project: Fall 1987

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Not principal investigator	30,536	32,210	24,530	375
SE	566	595		
Principal investigator	31,572	35,187	2,391	31
SE	1,494	1,701		

Other 4-Year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
Not principal investigator	49,456	54,911	13,986	103
SE	2,448	3,271		
Principal investigator	68,240	70,497	7,339	30
SE	5,240	5,396		

Note: Principal investigator on a grant funded by any external agency but not by the institution (e.g., federal or state governments, foundations, industry).

Appendix E1:

Mean income from institution for tenure-track, full-time faculty, by percent of time spent on administration: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	38,491	42,743	70,190	960
SE	489	1,098		
5.0-9.0%	40,410	43,768	70,679	921
SE	588	678		
10.0-19.0%	41,720	45,976	104,708	1,384
SE	466	614		
20.0% or more	48,546	53,287	84,368	1,067
SE	688	777		

Appendix E2:

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on administration: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	45,214	53,974	22,186	269
SE	1,118	3,379		
5.0-9.0%	49,569	54,355	26,445	297
SE	1,189	1,418		
10.0-19.0%	46,200	52,453	39,050	472
SE	785	1,240		
20.0% or more	56,694	63,120	33,371	388
SE	1,128	1,269		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 5%	35,608	38,180	10,766	178
SE	1,002	1,091		
5.0-9.0%	38,257	41,088	10,959	170
SE	1,278	1,353		
10.0-19.0%	38,830	42,439	15,506	236
SE	832	883		
20.0% or more	41,026	44,922	10,941	181
SE	1,150	1,223		

Appendix E2 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on administration: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	35,137	36,981	29,097	409
SE	557	593		
5.0-9.0%	34,154	36,762	23,421	341
SE	546	644		
10.0-19.0%	35,522	38,070	32,102	482
SE	538	592		
20.0% or more	42,315	46,099	27,855	370
SE	910	995		

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
< 5%	32,517	34,528	5,799	85
SE	1,291	1,353		
5.0-9.0%	27,012	28,827	6,455	90
SE	906	903		
10.0-19.0%	30,782	32,567	8,518	140
SE	797	865		
20.0% or more	32,430	34,237	6,150	91
SE	1,288	1,396		

Appendix E2 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time spent on administration: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 5%	*	*		
SE	*	*		
5.0-9.0%	*	*		
SE	*	*		
10.0-19.0%	58,716	63,800	9,532	54
SE	3,516	4,102		
20.0% or more	62,272	66,628	6,051	37
SE	5,733	6,868		

KEY

* = Too few cases for reliable estimate.

Appendix E3:

Mean income from institution for tenure-track, full-time faculty, by percent of time committed to service: Fall 1987

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Less than 5.0%	42,738	47,016	299,020	3,910
SE	307	430		
5.0% or greater	40,174	43,475	30,925	422
SE	731	822		

Appendix E4:

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time committed to service: Fall 1987

	Basic from inst.	Total inst. income	Weighted N	N
Research Universities				
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Less than 5.0%	49,609	56,261	111,758	1,320
SE	560	945		
5.0% or greater	50,120	53,999	9,294	106
SE	1,669	1,947		
Doctoral Universities				
Less than 5.0%	38,416	41,543	42,985	684
SE	565	601		
5.0% or greater	38,998	43,408	5,187	81
SE	1,464	1,632		
Comprehensive Universities				
Less than 5.0%	36,952	39,659	99,918	1,431
SE	363	402		
5.0% or greater	35,768	38,276	12,557	171
SE	808	875		

Appendix E4 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and percent of time committed to service: Fall 1987

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Less than 5.0%	30,655	32,380	24,177	355
SE	569	603		
5.0% or greater	30,388	33,306	2,744	51
SE	1,536	1,629		

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
Less than 5.0%	57,019	61,438	20,183	120
SE	2,552	3,027		
5.0% or greater	*	*		
SE	*	*		

KEY

* = Too few cases for reliable estimate.

Appendix F1:

Mean income from institution for tenure-track, full-time faculty, by type of institution and academic rank: Fall 1987

Research Universities

	Basic salary from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Professor	58,124	63,548	57,531	702
SE	732	826		
Associate	45,939	55,431	34,272	412
SE	927	2,491		
Assistant	37,303	42,234	27,891	294
SE	835	1,154		
Instructor/ Lecturer *	*	*	*	*

Doctoral Universities

	Basic salary from inst.	Total inst. income	Weighted N	N
Professor	47,324	51,614	18,027	301
SE	797	844		
Associate	36,913	39,941	16,260	264
SE	833	851		
Assistant	29,526	31,886	12,549	183
SE	648	726		
Instructor/ Lecturer *	*	*	*	*

Appendix F1 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and academic rank: Fall 1987

Comprehensive Colleges and Universities

		Basic salary from inst.	Total inst. income	Weighted N	N	
All institutions		$42,498	$46,684	329,945	4,332	
SE		286	397			
Professor		44,569	47,770	44,050	680	
SE		437	533			
Associate		33,742	36,329	34,360	485	
SE		339	374			
Assistant		29,038	31,281	28,953	392	
SE		508	575			
Instructor/ Lecturer	*	*	*	*	*	

Liberal Arts Colleges

		Basic salary from inst.	Total inst. income	Weighted N	N	
Professor		37,578	39,769	9,206	160	
SE		966	1,022			
Associate		29,981	31,532	8,109	113	
SE		579	652			
Assistant		23,365	25,236	7,880	105	
SE		711	765			
Instructor/ Lecturer	*	*	*	*	*	*

Appendix F1 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and academic rank: Fall 1987

Other 4-Year Colleges

		Basic salary from inst.	Total inst. income	Weighted N	N	
All institutions		$42,498	$46,684	329,945	4,332	
SE		286	397			
Professor		64,576	66,211	10,324	58	
SE		4,214	4,227			
Associate		52,172	62,285	6,104	42	
SE		3,341	5,905			
Assistant		43,561	46,639	4,625	30	
SE		2,676	3,501			
Instructor/ Lecturer	*	*	*	*	*	*

KEY

* = Too few to permit reliable estimate.

Appendix F2:

Mean income from institution for tenure-track, full-time faculty, by type of institution and age group: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 30	*	*		
SE	*	*		
30-44	43,190	51,913	49,235	519
SE	757	1,933		
45-54	51,924	56,895	38,940	497
SE	975	1,090		
55-59	54,410	57,933	13,675	187
SE	1,075	1,276		
60-64	59,000	65,532	13,625	144
SE	1,676	1,898		
65 or over	58,836	61,785	4,749	69
SE	3,057	3,102		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 30	*	*		
SE	*	*		
30-44	33,816	36,669	17,238	257
SE	923	954		
45-54	38,941	42,698	17,323	302
SE	706	809		
55-59	42,138	45,807	6,252	99
SE	1,334	1,440		
60-64	49,454	52,291	4,237	68
SE	1,890	2,018		
65 or over	42,826	45,074	2,335	29
SE	3,074	3,101		

Appendix F2 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and age group: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 30	*	*		
SE	*	*		
30-44	30,845	33,624	39,214	519
SE	506	652		
45-54	38,366	41,387	42,866	609
SE	445	499		
55-59	41,337	43,810	14,080	215
SE	698	707		
60-64	46,084	47,904	11,109	173
SE	1,554	1,536		
65 or over	40,918	42,443	4,052	69
SE	1,369	1,397		

Liberal Arts Colleges

< 30	*	*		
SE	*	*		
30-44	26,270	27,926	10,674	156
SE	634	689		
45-54	32,901	35,213	8,316	128
SE	779	861		
55-59	36,624	38,723	3,911	66
SE	1,914	1,931		
60-64	34,938	36,264	1,882	30
SE	1,480	1,674		
65 or over	*	*		
SE	*	*		

Appendix F2 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and age group: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 30	------		------	
SE	-----		-----	
30-44	48,903	54,448	7,575	51
SE	2,852	4,413		
45-54	65,831	72,059	6,998	48
SE	5,384	5,853		
55-59	*	*		
SE	*	*		
60-64	*	*		
SE	*	*		
65 or over	*	*		
SE	*	*		

KEY

* = Too few for reliable estimate.

Appendix F3:

Mean income from institution for tenure-track, full-time faculty, by type of institution and gender: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Female	40,193	48,952	21,382	266
SE	983	3,470		
Male	51,676	57,619	99,671	1,160
SE	597	754		

Doctoral Universities

Female	29,945	32,301	10,974	181
SE	762	819		
Male	40,996	44,529	37,198	584
SE	610	650		

Comprehensive Universities

Female	31,270	33,108	27,458	394
SE	481	498		
Male	38,612	41,570	85,017	1,208
SE	402	448		

Appendix F3 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and gender: Fall 1987

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Female	25,996	27,462	6,377	106
SE	802	911		
Male	32,066	34,030	20,544	300
SE	636	664		

Other 4-Year Institutions

Female	*	*		
SE	*	*		
Male	57,874	62,693	19,021	114
SE	2,609	3,116		

KEY

* = Too few cases for reliable estimate.

Appendix F4:

Mean income from institution for tenure-track, full-time faculty, by type of institution and racial/ethnic minority: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Nonminority	49,897	56,616	107,495	1,276
SE	563	966		
Minority	46,918	51,498	12,013	135
SE	1,740	2,033		

Doctoral Universities

Nonminority	38,479	41,732	44,514	702
SE	562	598		
Minority	38,651	42,140	3,501	59
SE	1,422	1,678		

Comprehensive Universities

Nonminority	36,613	39,256	97,965	1,419
SE	355	377		
Minority	38,739	41,797	12,899	156
SE	1,052	1,485		

Appendix F4 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and racial/ethnic minority: Fall 1987

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Nonminority	31,002	32,784	24,160	376
SE	557	599		
Minority	25,710	28,491	2,388	26
SE	1,798	1,653		

Other 4-Year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
Nonminority	56,617	61,387	18,388	118
SE	2,655	3,152		
Minority	*	*		
SE	*	*		

KEY

* = Too few for reliable estimate.

Appendix F5:

Mean income from institution for tenure-track, full-time faculty, by type of institution and highest degree obtained: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Doctorate/Prof.	50,399	57,228	111,553	1,320
SE	550	938		
Masters	39,573	41,582	7,543	84
SE	1,995	2,213		
Bachelors/Other	*	*		
SE	*	*		

Doctoral Universities

Doctorate/Prof.	39,914	43,378	40,750	654
SE	577	613		
Masters	30,374	32,589	5,975	91
SE	1,057	1,186		
Bachelors/Other	*	*		
SE	*	*		

Comprehensive Universities

Doctorate/Prof.	38,985	41,951	82,165	1,249
SE	404	445		
Masters	30,941	32,852	27,037	315
SE	456	518		
Bachelors/Other	31,038	33,046	3,273	38
SE	1,420	1,605		

Appendix F5 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and highest degree obtained: Fall 1987

Liberal Arts Colleges

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
Doctorate/Prof.	32,059	33,808	18,276	300
SE	661	687		
Masters	26,755	28,646	7,859	98
SE	805	894		
Bachelors/Other	*	*		
SE	*	*		

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
Doctorate/Prof.	58,970	63,568	18,767	109
SE	2,664	3,192		
Masters	*	*		
SE	*	*		
Bachelors/Other	*	*		
SE	*	*		

KEY

* = Too few for reliable estimate.

Appendix F6:

Mean income from institution for tenure-track, full-time faculty, by type of institution and time in rank: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 3 years	44,193	53,443	24,395	262
SE	1,328	3,426		
3-5 years	45,204	49,627	32,053	353
SE	871	985		
6-11 years	52,733	60,587	31,502	390
SE	1,122	1,606		
12 + years	55,037	60,011	33,102	421
SE	889	1,042		

Doctoral Universities

	Basic from inst.	Total inst. income	Weighted N	N
< 3 years	37,553	40,055	12,149	166
SE	1,419	1,448		
3-5 years	35,122	38,846	11,011	177
SE	938	1,008		
6-11 years	36,610	39,935	12,778	212
SE	783	909		
12 + years	44,369	47,918	12,234	210
SE	934	1,022		

Appendix F6 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and time in rank: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 3 years	30,643	32,911	22,182	292
SE	616	688		
3-5 years	34,817	37,967	28,991	406
SE	580	647		
6-11 years	38,874	41,616	32,027	428
SE	783	891		
12 + years	41,237	43,713	29,276	476
SE	518	549		

Liberal Arts Colleges

< 3 years	27,170	28,517	8,231	117
SE	900	952		
3-5 years	27,096	29,154	7,264	115
SE	967	963		
6-11 years	33,397	35,622	6,683	98
SE	802	924		
12 + years	38,138	39,990	4,742	76
SE	1,312	1,434		

Appendix F6 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and time in rank: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 3 years	46,732	52,506	3,598	30
SE	3,248	4,371		
3-5 years	56,762	61,181	7,431	41
SE	5,236	6,288		
6-11 years	56,930	58,114	6,153	39
SE	4,516	4,442		
12 + years	*	*		
SE	*	*		

KEY

* = Too few cases for reliable estimate.

Appendix F7:

Mean income from institution for tenure-track, full-time faculty, by type of institution and years in current position at institution: Fall 1987

Research Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 4 years	41,295	46,221	23,186	254
SE	1,062	1,311		
4-7 years	49,294	62,622	21,646	214
SE	1,646	4,301		
8-14 years	51,671	56,499	28,340	328
SE	1,222	1,312		
15-19 years	52,632	58,205	19,846	238
SE	1,120	1,436		
20 + years	52,674	57,289	28,034	392
SE	842	983		

Doctoral Universities

< 4 years	34,315	37,157	12,357	171
SE	1,074	1,146		
4-7 years	37,403	39,764	7,152	107
SE	1,679	1,721		
8-14 years	36,014	39,457	10,143	151
SE	1,095	1,227		
15-19 years	41,470	44,832	7,474	138
SE	1,217	1,269		
20 + years	44,071	48,167	11,046	198
SE	862	930		

Appendix F7 (continued):

Mean income from institution for tenure-track, full-time faculty, by type of institution and years in current position at institution: Fall 1987

Comprehensive Universities

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 4 years	31,379	34,050	23,887	297
SE	775	1,035		
4-7 years	33,466	36,218	17,323	216
SE	818	880		
8-14 years	36,979	39,667	21,338	288
SE	985	994		
15-19 years	39,350	42,195	22,043	314
SE	602	623		
20 + years	41,442	43,968	27,885	487
SE	496	535		

Liberal Arts Colleges

< 4 years	25,944	27,396	6,589	85
SE	1,024	1,128		
4-7 years	25,031	26,789	3,938	58
SE	1,201	1,273		
8-14 years	27,963	30,140	6,108	79
SE	721	713		
15-19 years	34,510	36,980	4,166	73
SE	821	1,024		
20 + years	39,289	40,861	6,120	111
SE	1,153	1,212		

Appendix F7 (concluded):

Mean income from institution for tenure-track, full-time faculty, by type of institution and years in current position at institution: Fall 1987

Other 4-year Institutions

	Basic from inst.	Total inst. income	Weighted N	N
All institutions	$42,498	$46,684	329,945	4,332
SE	286	397		
< 4 years	49,859	56,622	5,201	34
SE	3,803	6,307		
4-7 years	*	*		
SE	*	*		
8-14 years	70,882	73,561	4,476	31
SE	7,084	6,935		
15-19 years	*	*		
SE	*	*		
20 + years	*	*		
SE	*	*		

KEY

* = Too few cases for reliable estimate.

Appendix G1:

Multiple regression for total income from institution, tenure-track, full-time faculty by type of institution: Fall 1987

Research Universities

R-square = .35

N (unweighted) = 1269

Predictor	Beta	SE	Standardized Beta	P
		Significant		
Publications (career)	5554.43	521.81	.27	.0001
High paying field	7298.39	766.27	.24	.0001
% time, administration	5713.58	620.08	.22	.0001
Hours in class/week	3227.97	619.54	.15	.0001
Seniority	2932.43	619.14	.12	.0001
Taught only graduate students	1987.41	508.60	.10	.0001
Male	2903.89	645.80	.11	.0001
More research/less teaching	2229.30	717.42	.08	.002
Highest degree-doctorate	1842.62	855.95	.05	.03

Appendix G1 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by type of institution: Fall 1987

Doctoral Universities

R-square = .42

N (unweighted) = 711

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4933.58	477.45	.33	.0001
Taught only graduate students	4123.86	631.96	.21	.0001
Male	2427.74	431.72	.17	.0001
Publications (career)	2875.55	574.22	.16	.0001
Highest degree-doctorate	2505.47	501.70	.15	.0001
High paying field	2466.51	618.72	.12	.0001
Principal investigator, funded	1883.29	509.74	.12	.0002
% time, administration	1409.79	475.29	.09	.003
More research/less teaching	1547.10	598.46	.09	.01
Hours in class/week	1530.70	732.16	.08	.04
Taught only undergraduates	1013.00	484.70	.07	.04

Appendix G1 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by type of institution: Fall 1987

Comprehensive Universities

R-square = .43

N (unweighted) = 1491

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4441.41	314.47	.30	.0001
% time, administration	3099.23	322.60	.22	.0001
Taught only graduate students	4701.52	542.08	.19	.0001
Highest degree-doctorate	2262.26	266.87	.18	.0001
High paying field	3637.22	427.84	.18	.0001
Male	2079.30	280.36	.15	.0001
Publications (career)	3502.76	496.19	.15	.0001
Hours in class/week	2259.09	387.19	.14	.0001
More research/less teaching	1965.59	459.32	.10	.0001
Minority faculty member	863.41	278.94	.06	.002

Appendix G1 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by type of institution: Fall 1987

Liberal Arts Colleges

R-square = .45

N (unweighted) = 367

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5406.92	473.64	.48	.0001
More research/less teaching	4333.77	857.28	.23	.0001
Male	2329.31	466.47	.21	.0001
Publications (career)	5380.39	1312.29	.18	.0001
Highest degree-doctorate	1112.92	391.07	.12	.005
Taught only undergraduates	-1448.36	542.17	-.13	.01
High paying field	2047.93	829.33	.11	.01
Hours in class/week	-1912.54	796.54	-.13	.02
Student contact hours	3149.04	1632.71	.10	.05

Appendix G1 (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by type of institution: Fall 1987

Other 4-year Institutions

R-square = .35

N (unweighted) = 115

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Principal investigator, funded	7365.97	2948.40	.26	.01
% time, administration	9134.56	3418.17	.23	.01
Male	9066.04	3511.48	.23	.01
Taught only undergraduates	9011.09	3578.17	.22	.01
Taught only graduate students	-4176.79	2049.85	-.20	.04

Appendix G2:

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Agriculture/Home Economics

R-square = .56

N (unweighted) = 174

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4359.23	819.43	.32	.0001
Principal investigator, funded	3390.41	804.16	.29	.0001
% time, administration	3635.98	846.52	.27	.0001
Male	2594.27	708.00	.23	.0003
Highest degree-doctorate	3128.14	997.85	.20	.002

Business

R-square = .43

N (unweighted) = 167

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	19752.00	3598.96	.41	.0001
Highest degree-doctorate	3265.36	1142.90	.21	.005

Appendix G2 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Education

R-square = .53 N (unweighted) = 370

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5684.34	560.59	.41	.0001
Publications (career)	6924.34	935.93	.31	.0001
Male	2151.94	454.86	.19	.0001
Highest degree-doctorate	1791.88	517.57	.14	.001
% time, administration	1632.68	522.51	.13	.002
Minority faculty member	1249.76	484.54	.10	.01
Hours in class/week	-1830.42	773.49	-.11	.02
Principal investigator, funded	1591.76	663.02	.09	.02

Engineering

R-square = .48 N (unweighted) = 152

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	3429.45	872.76	.30	.0001
More research, less teaching	4569.55	1299.83	.30	.0006
Principal investigator, funded	2491.33	887.68	.21	.006
Publications (career)	3380.11	1261.77	.19	.008
Taught only graduate students	2601.84	1288.26	.14	.05

Appendix G2 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Fine Arts

R-square = .37   N (unweighted) = 279

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	4260.24	538.52	.41	.0001
% time, administration	2133.77	585.445	.20	.0003
Publications (career)	3449.78	1231.37	.14	.006
Highest degree-doctorate	1070.43	435.22	.14	.01
Minority faculty member	1215.99	546.70	.11	.03
Principal investigator, funded	1857.82	888.58	.10	.04

Health Sciences

R-square = .51   N (unweighted) = 220

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	22083.00	2940.40	.44	.0001
Male	7182.01	1917.44	.23	.0002
% time, administration	6753.18	1738.19	.21	.0001
Hours in class/week	3722.46	1342.61	.21	.006
Taught only graduate students	4333.86	1425.34	.17	.003

Appendix G2 (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Humanities

R-square = .50

N (unweighted) = 1020

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5727.85	306.77	.45	.0003
% time, administration	2166.44	321.16	.17	.0001
Hours in class/week	-3426.69	674.41	-.16	.0001
Publications (career)	1993.26	344.71	.14	.0001
Student contact hours	4835.77	1060.91	.12	.0001
Highest degree-doctorate	1549.85	329.23	.12	.0001
% time, service	-1642.33	353.84	-.11	.0004
Taught only graduate students	2478.76	607.41	.10	.0001
More research/less teaching	1610.36	452.82	.09	.0001
Male	1074.71	280.55	.09	.0001
Principal investigator, funded	1889.94	524.97	.08	.0001
Taught only undergraduates	977.62	443.99	.05	.03

Appendix G2 (continued)

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Natural Sciences

R-square = .49 N (unweighted) = 481

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	4142.84	481.23	.33	.0001
Seniority	4920.71	627.59	.29	.0001
% time, administration	4746.82	720.81	.23	.0001
Principal investigator, funded	2678.57	624.62	.18	.0001
Taught only graduate students	1665.13	637.34	.11	.01
More research/less teaching	1632.13	721.64	.10	.02

Social Sciences

R-square = .51 N (unweighted) = 680

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	5820.98	432.09	.41	.0001
Publications (career)	4105.53	541.87	.25	.0001
% time, administration	3024.17	400.69	.23	.0001
More research/less teaching	2120.60	456.66	.15	.0001
Principal investigator, funded	2017.67	433.62	.13	.0001
Highest degree-doctorate	1381.75	501.82	.08	.006
Male	743.54	385.69	.05	.05

Appendix G2 (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by program area: Fall 1987

Other Fields

R-square = .45

N (unweighted) = 295

Predictor	Beta	SE	Standardized Beta	P
		Significant		
Seniority	5692.46	919.43	.31	.0001
More research/less teaching	4257.51	1205.37	.20	.0005
Publications (career)	3059.09	839.96	.19	.0003
Hours in class/week	-5342.77	1863.37	-.17	.005
Student contact hours	6847.87	2194.77	.15	,002
Highest degree-doctorate	2377.56	836.44	.14	.005
Taught only graduate students	3582.62	1325.03	.14	.007
Male	2061.39	920.36	.10	.03

Appendix G3A:

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Research Universities

Professor

R-square = .25 N (unweighted) = 611

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	3546.51	519.95	.26	.0001
High paying field	6297.77	1012.04	.24	.0001
% time, administration	4317.83	771.09	.22	.0001
Taught only graduate students	2501.64	659.04	.16	.0002

Associate Professor

R-square = .42 N (unweighted) = 367

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	20993.00	2797.39	.34	.0001
Hours in class/week	6015.47	1088.38	.32	.0001
High paying field	9205.62	1757.73	.26	.0001
% time, administration	4487.55	1588.22	.12	.005
Highest degree-doctorate	3287.02	1836.80	.09	.04

Appendix G3A (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Research Universities

Assistant Professor

R-square = .42

N (unweighted) = 276

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Publications (career)	23779.00	3396.65	.39	.0001
High paying field	7162.84	1217.68	.32	.0001
% time, administration	4488.66	1228.96	.18	.0003
Seniority	-5541.39	1886.50	-.15	.004
Highest degree-doctorate	3495.69	1234.12	.15	.005
Hours in class/week	3306.84	1224.28	.18	.007
Male	2117.45	830.07	.12	.01
Student contact hours	-4461.46	1934.62	-.15	.02
Principal investigator, funded	-2171.78	1033.52	-.12	.04

Appendix G3B:

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Doctoral Universities

Professor

R-square = .24 N (unweighted) = 278

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Taught only graduate students	4578.77	1015.19	.30	.0001
Seniority	3276.16	967.91	.20	.001
Principal investigator, funded	2646.95	971.36	.18	.007
Publications (career)	1841.25	760.46	.15	.02
Taught only undergraduates	1928.20	856.31	.15	.03

Associate Professor

R-square = .39 N (unweighted) = 244

	Significant			
High paying field	4786.41	838.59	.32	.0001
Taught only graduate students	4634.78	1060.78	.28	.0001
% time, administration	2825.16	685.51	.25	.0001
Male	2715.75	609.87	.24	.0001
Highest degree-doctorate	2673.46	747.19	.20	.0004
Hours in class/week	4906.56	1385.46	.24	.0005
Seniority	2178.25	817.43	.15	.008
More research/less teaching	2008.72	805.40	.16	.01

Appendix G3B (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Doctoral Universities

Assistant Professor

R-square = .22

N (unweighted) = 174

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Principal investigator, funded	2066.41	919.05	.18	.03
Minority faculty member	1441.26	715.91	.15	.05

Appendix G3C:

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Professor

R-square = .34   N (unweighted) = 638

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Hours in class/week	4037.16	538.67	.32	.0001
High paying field	4165.80	690.28	.21	.0001
More research/less teaching	3849.01	747.53	.20	.0001
% time, administration	2221.38	442.24	.19	.0001
Publications (career)	2805.35	547.47	.18	.0001
% time, service	-1486.43	441.83	-.11	.001
Highest degree-doctorate	1727.42	582.41	.10	.003
Taught only graduate students	2388.79	846.22	.10	.005
Seniority	1545.95	564.39	.09	.006
Male	1521.92	563.83	.09	.007

Appendix G3C (continued):

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Associate Professor

R-square = .27

N (unweighted) = 452

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Seniority	2265.10	437.85	.24	.0001
% time, administration	1867.01	391806	.24	.0001
High paying field	2165.29	525.64	.18	.0001
Hours in class/week	-2224.80	591.12	-.19	.0002
Taught only graduate students	-2183.03	665.08	-.15	.001
Male	1025.69	317.34	.13	.001
% time, service	959.60	308.28	.13	.002
Student contact hours	2197.13	764.99	.13	.004
More research/less teaching	1394.78	665.08	.12	.01
Minority faculty member	715.51	326.32	.09	.02

Appendix G3C (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Comprehensive Universities

Assistant Professor

R-square = .32

N (unweighted) = 358

Significant

Taught only graduate students	7313.92	1015.11	.36	.0001
Seniority	3037.45	621.03	.25	.0001
High paying field	3054.54	644.32	.23	.0001
Male	1392.11	400.81	.17	.001
Highest degree-doctorate	1279.09	398.65	.16	.002
More research/less teaching	1928.73	675.01	.15	.005
% time, administration	-1767.86	889.49	-.10	.05

Appendix G3D:

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Liberal Arts Colleges

Professor

R-square = .43   N (unweighted) = 146

Predictor	Beta	SE	Standardized Beta	P
	Significant			
More research/less teaching	7598.69	1616.46	.38	.0001
Taught only undergraduates	-4382.74	1093.14	-.34	.0001
Seniority	5223.61	1186.70	.33	.0001
Male	4605.57	1318.79	.27	.001
Publications (career)	8066.06	2393.53	.27	.001

Associate Professor

R-square = .43   N (unweighted) = 109

	Significant			
Male	1862.59	472.41	.33	.0002
High paying field	2426.24	1002.03	.23	.02
Hours in class/week	-2427.11	1021.69	-.27	.02
Seniority	1334.66	628.89	.20	.04
Highest degree-doctorate	1031.21	508.87	.20	.05

Appendix G3D (concluded):

Multiple regression for total income from institution, tenure-track, full-time faculty by academic rank and type of institution: Fall 1987

Liberal Arts Colleges

Assistant Professor

R-square = .34

N (unweighted) = 103

Predictor	Beta	SE	Standardized Beta	P
	Significant			
Hours in class/week	-3756.61	1306.66	-.45	.005
Student contact hours	11788.83	4117.26	.39	.005
Publications (career)	18207.00	6464.39	.36	.005
Seniority	4735.76	1638.64	.29	.005
Taught only undergraduates	-2099.68	939.80	-.24	.03
Principal investigator, funded	2398.98	1149.64	.21	.04
Minority faculty member	-1730.11	846.37	-.21	.04

Appendix H:

Survey Instrument

NATIONAL SURVEY OF POSTSECONDARY FACULTY

Faculty Questionnaire

PLEASE NOTE:

Many of our questions ask about your activities during the 1987 Fall Term. By this, we mean whatever academic term was in progress on October 15, 1987.

All questions that ask about your current position or institution refer to your position during the 1987 Fall Term at the institution to which this questionnaire was addressed.

This questionnaire was designed to be completed by both full- and part-time instructional faculty in 2- and 4-year postsecondary institutions of all kinds. Because this is such a diverse group, some of the questions may not be worded quite appropriately for your situation. We would appreciate your tolerance of these difficulties.

1. During the 1987 Fall Term, did you have any instructional duties at this institution (e.g., teaching one or more courses, advising or supervising students' academic activities)?

   (PLEASE CIRCLE ONE NUMBER)

   Yes 1

   No 2

   IF NO, PLEASE STOP HERE AND RETURN THIS PACKET TO SRI IN THE ENCLOSED FRANKED ENVELOPE.

2. During the 1987 Fall Term, were at least some of your instructional duties related to for-credit courses, or were all of your instructional duties related to noncredit courses?

   (PLEASE CIRCLE ONE NUMBER)

   At least some of my instructional duties were related to for-credit courses 1

   All of my instructional duties were related to noncredit courses 2

   IF ALL NONCREDIT, PLEASE STOP HERE AND RETURN THIS PACKET TO SRI IN THE ENCLOSED FRANKED ENVELOPE.

3. During the 1987 Fall Term, were you on sabbatical from another institution?

   Yes 1

   No 2

A. NATURE OF EMPLOYMENT

4. During the 1987 Fall Term, did this institution consider you to be employed here full-time or part-time?

Full-time 1

Part-time 2

5. During the 1987 Fall Term, were you employed only at this institution, or did you also have other employment? *Please include outside consulting or other self-owned business.*

Employed only at this institution . . . . . 1 --> SKIP TO Q.7

Also had other employment or consulting . . 2

6. Other than this institution, in which of the following ways were you employed during the 1987 Fall Term?
(PLEASE CIRCLE "FULL-TIME" OR "PART-TIME" FOR ALL SECTORS THAT APPLY)

	TYPE OF EMPLOYMENT	
Employment sector	Full-time (35+ hours/week)	Part-time (<35 hours/week)
Consulting, freelance work, or self-owned business in area directly related to my field at this institution	1	2
Consulting, freelance work, or self-owned business in area largely unrelated to my field at this institution	1	2
On staff of another postsecondary educational institution	1	2
On staff of an elementary or secondary school	1	2
On staff of a hospital or other health care/ clinical setting	1	2
On staff of a foundation or other nonprofit organization	1	2
On staff of a for-profit business or industry in the private sector	1	2
On staff of the federal government (including military)	1	2
On staff of a state or local government	1	2
Other (PLEASE SPECIFY BELOW:) ______________________	1	2

7. Were you chairperson of a department or division at this institution during the 1987 Fall Term?

Yes 1

No 2

8. During the 1987 Fall Term, were you on sabbatical from this institution?

Yes 1

No 2

9. What was your tenure status at this institution during the 1987 Fall Term?

Not applicable: no tenure system at this institution 1

Not applicable: no tenure system for my faculty status 2

Not on tenure track 3

On tenure track but not tenured . . 4

(1–4: SKIP TO Q.11)

Tenured 5

10. In what year did you achieve tenure at this institution? *(PLEASE GIVE YOUR BEST ESTIMATE IF NOT SURE)*

19_____

PLEASE SKIP TO QUESTION 12

11. During the 1987 Fall Term, what was the duration of your contract or appointment at this institution?

One academic term 1

One academic/calendar year 2

Two or more academic/calendar years . 3

Unspecified duration 4

Other (PLEASE SPECIFY BELOW) 5

____

12. Which of the following best describes your academic rank at this institution during the 1987 Fall Term?
(PLEASE CIRCLE ONE NUMBER)

Not applicable: no ranks designated at this institution	0 --> SKIP TO Q.14
Distinguished/Named Professor	1
Professor	2
Associate Professor	3
Assistant Professor	4
Instructor	5
Lecturer	6
Other (PLEASE SPECIFY BELOW)	7

____

13. In what year did you first achieve this rank?
(PLEASE GIVE YOUR BEST ESTIMATE IF NOT SURE)

19_____

14. During the 1987 Fall Term, did you hold any of the following kinds of appointments at this institution?
(PLEASE CIRCLE ALL THAT APPLY)

Acting	1
Affiliate or adjunct	2
Visiting	3
Assigned by religious order	4
No, none of the above	0

15. Have you ever achieved tenure at another institution?
(PLEASE CIRCLE ONE NUMBER AND SPECIFY THE YEAR TENURE FIRST ACHIEVED, IF APPLICABLE)

Yes (YEAR FIRST ACHIEVED: 19____)	1
No	2

16. What is your principal field or discipline of teaching?
(PLEASE REFER TO THE LIST OF FIELDS OF STUDY ON PAGES 24-25 AND ENTER THE APPROPRIATE CODE NUMBER(S) BELOW)

Field code of my discipline: ______

17. Are any faculty at this institution legally represented by a union (or other association) for purposes of collective bargaining?

Yes 1
No . . . . 2 } SKIP TO Q.19
Don't know . . . . 9 }

18. Are you a member of the union (or other bargaining association) that represents faculty at this institution?

Yes 1
No 2

B. JOB SATISFACTION ISSUES

19. How satisfied or dissatisfied do *you personally* feel about each of the following aspects of your job at this institution?
(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	DISSATISFIED		SATISFIED		
	Very	Somewhat	Somewhat	Very	Does not apply
My work load	1	2	3	4	0
My job security	1	2	3	4	0
The authority I have to make decisions about what courses I teach	1	2	3	4	0
The authority I have to make decisions about content and methods in the courses I teach	1	2	3	4	0
The authority I have to make decisions about other (noninstructional) aspects of my job	1	2	3	4	0
The mix of teaching, research, administration, and service (as applicable) that I am required to do	1	2	3	4	0

(continued)

Satisfaction with your job at this institution: (continued)

	DISSATISFIED		SATISFIED		Does not apply
	Very	Somewhat	Somewhat	Very	
Opportunity for my advancement in rank at this institution	1	2	3	4	0
Time available for working with students as an advisor, mentor, etc.	1	2	3	4	0
Availability of support services and equipment (including clerical support, personal computers, etc.)	1	2	3	4	0
Freedom to do outside consulting	1	2	3	4	0
My salary	1	2	3	4	0
My benefits, generally	1	2	3	4	0
Overall reputation of the institution	1	2	3	4	0
Institutional mission or philosophy	1	2	3	4	0
Quality of leadership in my department/program	1	2	3	4	0
Quality of chief administrative officers at this campus	1	2	3	4	0
Quality of my colleagues in my department/program	1	2	3	4	0
Quality of faculty leadership (e.g., Academic Senate, Faculty Council) at this institution	1	2	3	4	0
Quality of union leadership at this institution	1	2	3	4	0
Relationship between administration and faculty at this institution	1	2	3	4	0
Interdepartmental cooperation at this institution	1	2	3	4	0
Spirit of cooperation among faculty at this institution	1	2	3	4	0
Quality of my research facilities and support	1	2	3	4	0
Quality of undergraduate students whom I have taught here	1	2	3	4	0

(continued)

Satisfaction with your job at this institution: (continued)

	DISSATISFIED		SATISFIED		Does not apply
	Very	Somewhat	Somewhat	Very	
Quality of graduate students whom I have taught here	1	2	3	4	0
Teaching assistance that I receive	1	2	3	4	0
Research assistance that I receive	1	2	3	4	0
Spouse employment opportunities in this geographic area	1	2	3	4	0
My job here, overall	1	2	3	4	0

20. During the next three years, how likely is it that you will leave this job to do the following?
(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	Not at all likely	Somewhat likely	Very likely
Retire	1	2	3
Seek or accept a (different) part-time job	1	2	3
Seek or accept a (different) full-time job	1	2	3

21. IF you were to leave this job to accept another position, would you want to do more, less, or about the same amount of each of the following as you currently do?
(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	I WOULD WANT TO DO:		
	More of this	Same amount of this as I do now	Less of this
Research	1	2	3
Teaching	1	2	3
Advising students	1	2	3
Service activities	1	2	3
Administration	1	2	3

22. IF you were to leave this job to accept another position, how important would each of the following be in your decision to accept another position?

(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	Not important	Somewhat important	Very important
Salary level	1	2	3
Tenure-track/tenured position	1	2	3
Job security	1	2	3
Opportunities for advancement	1	2	3
Benefits	1	2	3
No pressure to publish	1	2	3
Good research facilities and equipment	1	2	3
Good instructional facilities and equipment	1	2	3
Excellent students	1	2	3
Excellent colleagues	1	2	3
Institutional mission or philosophy that is compatible with my own views	1	2	3
Good job for my spouse	1	2	3
Good geographic location	1	2	3
Good housing	1	2	3
Good environment/schools for my children	1	2	3
A full-time position	1	2	3
A part-time position	1	2	3

23. IF you were to leave your current position, how likely is it that you would do so to:
(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	Not at all likely	Somewhat likely	Very likely
a. Return to school as a student	1	2	3
b. Accept employment in:			
doctoral granting university or college	1	2	3
other 4-year university or college	1	2	3
2-year postsecondary institution	1	2	3
less than 2-year postsecondary institution	1	2	3
elementary or secondary school	1	2	3
hospital or other health care organization	1	2	3
consulting, self-owned business, freelancing	1	2	3
foundation or other nonprofit organization	1	2	3
private sector for-profit business or industry	1	2	3
federal government (including military)	1	2	3
state or local government	1	2	3

24. At what age do you think you are most likely to stop teaching at a postsecondary institution?
(PLEASE CIRCLE ONE NUMBER)

Under 40	1
40 - 44	2
45 - 49	3
50 - 54	4
55 - 59	5
60 - 64	6
65 - 69	7
70 or older . .	8
Have no idea . .	9

25. At what age do you think you are most likely to retire from paid employment?
(PLEASE CIRCLE ONE NUMBER)

Under 50	1
50 - 54	2
55 - 59	3
60 - 64	4
65 - 69	5
70 or older . .	6
Have no idea . .	9

C. ACADEMIC/PROFESSIONAL BACKGROUND

26. Please list below each collegiate and graduate degree that you hold, the name and location of the institution from which you received it, the year you received it, and the Field Code (**from pages 24-25**) that applies. *Please do not list honorary degrees.*

(PLEASE COMPLETE ALL COLUMNS FOR EACH DEGREE)

Codes for type of degree:

1	Certificate, diploma, or degree for completion of undergraduate program of at least 1 year but less than 2 years in length
2	Associate's degree or equivalent
3	Certificate, diploma, or degree for completion of undergraduate program of more than 2 years but less than 4 years in length
4	Bachelor's degree or equivalent
5	Graduate work not resulting in a degree
6	Master's degree or equivalent
7	Doctoral degree (Ph.D., Ed.D., etc.)
8	Professional degree (M.D., D.D.S., L.L.B., etc.)

Degree code	Year received	Field code	Name of institution	City and state/country of institution
____	19____	____	____	____
____	19____	____	____	____
____	19____	____	____	____
____	19____	____	____	____
____	19____	____	____	____
____	19____	____	____	____
____	19____	____	____	____

27. Which of the following undergraduate academic honors or awards, if any, did you receive?
(PLEASE CIRCLE ALL THAT APPLY)

National academic honor society, such as Phi Beta Kappa, Tau Beta Pi, or other field-specific national honor society	1
Cum laude or honors	2
Magna cum laude or high honors	3
Summa cum laude or highest honors	4
Other undergraduate academic achievement award	5
None of the above	0

28. When you were in graduate school, which of the following, if any, did you receive?
(PLEASE CIRCLE ALL THAT APPLY)

Doesn't apply: did not attend graduate school	0
Teaching assistantship	1
Research assistantship	2
Program or residence hall assistantship	3
Fellowship	4
Scholarship or traineeship	5
Grant	6
G.I. Bill or other veterans' financial aid	7
Loan	8
None of the above	9

29. For each of the jobs that you have held since graduating from college, please indicate in the table below the years that you began and left the job, the employment sector, your primary responsibility, and whether you were employed full-or part-time.

- *Please begin with your current job, and work backward.*
- *Do not list promotions in rank at your current job(s) as different jobs.*
- *Do not include temporary positions or work as a graduate assistant.*
- *Please list each job (other than promotions in rank) separately!*

(PLEASE COMPLETE ALL COLUMNS FOR EACH POSITION; SPECIFY EMPLOYMENT SECTOR AND PRIMARY RESPONSIBILITY CODES FROM THE LISTS ON THE FACING PAGE)

	Years job held		Employment sector	Primary responsibility	Full-time	Part-time
	From	To	(ENTER CODE)	(ENTER CODE)	(CIRCLE ONE)	
CURRENT JOB:	19_____	present	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2
	19_____	19_____	______	______	1	2

CODES FOR QUESTION 29

Employment sector codes

01 Graduate-level institution that is not part of a 4-year school (e.g., independent law school)

02 Doctoral granting university or college

03 Other 4-year college or university

04 2-year postsecondary institution

05 Less-than-2-year postsecondary institution

06 Elementary or secondary school

07 Hospital or other health care or clinical setting

08 Consulting, freelance work, or self-owned business in area directly related to my field at this institution

09 Consulting, freelance work, or self-owned business in area largely unrelated to my field at this institution

10 Foundation or other nonprofit organization

11 For-profit business or industry in the private sector

12 Federal government, including military

13 State or local government

14 Other (PLEASE SPECIFY BELOW)

IF YOU HAD MORE THAN ONE JOB IN THE "OTHER" CATEGORY, PLEASE LIST SEPARATELY AND CODE EMPLOYMENT SECTORS AS "14a," "14b," ETC., IN Q.30.

(a)______________________________

(b)______________________________

(c)______________________________

(d)______________________________

Primary responsibility codes

1 Teaching

2 Administration

3 Technical or research

4 Community/public service

5 Clinical services

6 Other

30. About how many of each of the following have you presented/published/etc. during your entire career and just during the last 2 years? *For publications, please include works that have been accepted for publication.*

(PLEASE GIVE YOUR BEST ESTIMATES IF NOT SURE; IF NONE, CIRCLE "0")

0 No presentations/publications/etc.

	Number in past 2 years	Total during career
Articles or creative works published in refereed professional or trade journals	______	______
Articles or creative works published in nonrefereed professional or trade journals	______	______
Articles or creative works published in juried popular media	______	______
Articles or creative works published in nonjuried popular media or in-house newsletters	______	______
Published reviews of books, articles, or creative works	______	______
Chapters in edited volumes	______	______
Textbooks	______	______
Other books	______	______
Monographs	______	______
Research or technical reports disseminated internally or to clients	______	______
Presentations at conferences, workshops, etc.	______	______
Exhibitions or performances in the fine or applied arts	______	______
Patents or copyrights (excluding thesis or dissertation)	______	______
Computer software products	______	______

D. INSTITUTIONAL RESPONSIBILITIES AND WORKLOAD

31. During the 1987 Fall Term, how many graduate or undergraduate dissertations or theses, comprehensive exams, or orals committees did you chair or serve on at this institution? *(PLEASE ENTER A NUMBER IN EACH CATEGORY; IF NONE, ENTER "0")*

	Number served on but did not chair	Number chaired
Thesis or dissertation committees	______	______
Comprehensive exams or orals committees (other than as part of thesis/dissertation committees)	______	______

32. For each for-credit class or section that you taught at this institution during the 1987 Fall Term, please indicate below the number of hours per week that the class met; if the class was team taught, please indicate the average number of hours per week that you personally taught it. Next, please indicate the number and primary level of students enrolled; the class' primary setting; and the number of teaching assistants (TA's), readers, etc., who assisted you with the class.

Please do not include noncredit courses that you taught. Also, please do not include individualized instruction, such as independent study or individual (one-on-one) performance classes.

If you taught multiple sections of the same course, please count them as separate classes, but do not include the lab section of a course as a separate class.

Codes for primary level of students:

1 Lower division students (first or second year) in program leading to associate or bachelor's degree

2 Upper division students (juniors or seniors) in program leading to bachelor's degree

3 Graduate students (post-baccalaureate)

4 Students in program leading to certificate or award other than associate, bachelor's, or graduate degree

5 All other students

6 Any combination of the above

Codes for primary setting:

1 Lecture

2 Seminar, discussion group

3 Lab, clinic

4 Fieldwork, field trips

5 Role playing, simulation, or other performance (e.g., art, music, drama)

6 TV, radio, or other distance media

7 Any combination of the above

8 Other (PLEASE SPECIFY BELOW):

(a)____________________

(b)____________________

(c)____________________

Number of hours per week the class met	IF TEAM TAUGHT: Avg. # hours per week you taught the class	Number of students enrolled	Primary level of students (ENTER CODE)	Primary setting (ENTER CODE)	Number of TA's readers, etc.
______	______	______	_____	_____	______
______	______	______	_____	_____	______
______	______	______	_____	_____	______
______	______	______	_____	_____	______
______	______	______	_____	_____	______

33. For each type of student listed below, please indicate how many at this institution received individualized instruction from you during the 1987 Fall Term. Also indicate the total number of contact hours per week that you spent providing individualized instruction to each group.
(PLEASE GIVE YOUR BEST ESTIMATES IF NOT SURE; IF NONE, CIRCLE "0")

Provided no individualized instruction 0

Types of students at this institution	INDIVIDUALIZED INSTRUCTION: Number of students	INDIVIDUALIZED INSTRUCTION: Total contact hours per week
Lower division students (first or second year) in program leading to associate or bachelor's degree	______	______
Upper division students (juniors, seniors) in program leading to bachelor's degree	______	______
Graduate students (post-baccalaureate)	______	______
Students in program leading to certificate/award other than associate/bachelor's/graduate degree	______	______
All other students	______	______

34. During the 1987 Fall Term, were you a principal investigator or project director on any grants or contracts at this institution, including service contracts or internal awards?

Yes 1

No . . . . . 2 —> SKIP TO Q.36

35. For the grants and contracts for which you were a principal investigator (PI) during the 1987 Fall Term, please indicate below, by source, how many you had and their total dollar amount for the 1987-88 academic year.
If you were/are a principal investigator on a multiple-investigator project, please divide the total dollar amount by the number of PIs on the project.
(PLEASE GIVE YOUR BEST ESTIMATE FOR EACH SOURCE; IF NONE, ENTER "0")

Source of funding	Number of grants/contracts	Total funding for the 1987-88 academic year
Federal government	______	$______
State or local government	______	$______
Foundation or other nonprofit	______	$______
For-profit business or industry in the private sector	______	$______
This institution	______	$______
Other source (PLEASE SPECIFY) ______	______	$______

36. On the average, how many hours per week did you spend at each of the following kinds of work during the 1987 Fall Term?
(PLEASE GIVE YOUR BEST ESTIMATES IF NOT SURE)

Average number hours per week during the 1987 Fall Term

All activities at this institution (teaching, research, administration, etc.) ________

Any other paid activities (e.g,. consulting, working on other jobs) ________

Unpaid (*pro bono*) professional service activities ________

37. Please estimate the percentage of your total working hours (i.e., the categories listed in Question 36) that you spent on each of the following activities during the 1987 Fall Term. *(PLEASE GIVE YOUR BEST ESTIMATES IF NOT SURE; IF NONE, ENTER "0")*

Note: The percentages you provide should sum to 100% of the total time you spent on professional activities.

Percent

Working with student organizations or intramural athletics ________

Teaching, advising, or supervising students (other than those activities covered in the above category) ________

Grading papers, preparing courses, developing new curricula, etc. ________

Administrative activities (including paperwork; staff supervision; serving on in-house committees, such as the academic senate; etc.) ________

Research; scholarship; preparing or reviewing articles or books; attending or preparing for professional meetings or conferences; etc. ________

Giving performances or exhibitions in the fine or applied arts, or speeches ________

Seeking outside funding (including proposal writing) ________

Taking courses, pursuing an advanced degree ________

Other professional development activities, such as practice or other activities to remain current in your field ________

Providing legal or medical services or psychological counseling to clients or patients ________

Outside consulting or freelance work, working at self-owned business ________

Paid or unpaid community or public service (civic, religious, etc.) ________

Other (PLEASE SPECIFY:) ______________________________ ________

______________________________ ________

We know that this is tedious, but please be sure that the above adds to 100%

E . BENEFITS AND PROFESSIONAL DEVELOPMENT ACTIVITIES

38. During the 1987 Fall Term, were the following employee benefits available to you at this institution?
(PLEASE CIRCLE ONE NUMBER FOR EACH BENEFIT)

	AVAILABLE TO ME		
	Yes	No	Don't know
Free or subsidized wellness or health promotion program (e.g., fitness or smoking cessation program)	1	2	9
Paid maternity leave	1	2	9
Paid paternity leave	1	2	9
Subsidized medical insurance or medical care	1	2	9
Subsidized dental insurance or dental care	1	2	9
Subsidized disability insurance	1	2	9
Subsidized life insurance	1	2	9
Retirement plan to which institution makes contributions	1	2	9
Retirement plan to which you make contributions but the institution does not	1	2	9
Tuition remission/grants at this or other institutions for spouse	1	2	9
Tuition remission/grants at this or other institutions for children	1	2	9
Subsidized child care	1	2	9
Subsidized housing/mortgage	1	2	9

39. Listed below are some ways that institutions and departments may use internal funds for the professional development of faculty members.

- If a professional development activity was not available to you during the 1987 Fall Term, please circle the "Not Available" code
- If an activity was available to you at this institution during the 1987 Fall Term, please indicate how adequate to your needs the funds available for that purpose were.
- If you do not know whether an activity was available to you, please circle the "Don't Know" code.

(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

Institutional or departmental funding for:	NOT available to me	AVAILABLE TO ME: INADEQUATE		AVAILABLE TO ME: ADEQUATE		Don't know if this was available
		Very	Somewhat	Somewhat	Very	
Tuition remission at this or other institutions	0	1	2	3	4	9
Professional association memberships	0	1	2	3	4	9
Registration fees, etc., for workshops, conferences, etc.	0	1	2	3	4	9
Professional travel	0	1	2	3	4	9
Training to improve research skills	0	1	2	3	4	9
Training to improve teaching skills	0	1	2	3	4	9
Retraining for fields in higher demand	0	1	2	3	4	9
Computer equipment	0	1	2	3	4	9

G. COMPENSATION

Note: Your responses on these and all other items in this questionnaire are STRICTLY CONFIDENTIAL, will be used only in statistical summaries, and will not be disclosed to your institution or to any individual or group. Furthermore, all information that would permit identification of individuals or institutions will be suppressed from the survey files.

40. For the calendar year 1987, please estimate your gross earnings before taxes from each of the sources listed below.

Please do not record any earnings in more than one category.

(PLEASE GIVE YOUR BEST ESTIMATES IF NOT SURE; IF NONE, ENTER "0")

Income from this institution:

Basic salary $______

Other teaching at this institution not included in basic salary (e.g., for summer session) ______

Supplements not included in basic salary (for administration, research, coaching sports, etc.) ______

Non-monetary compensation (e.g., food, housing, car) *(Please give approximate value)* ______

Any other income from this institution ______

Income from other sources:

Employment at another academic institution ______

Legal or medical services or psychological counseling ______

Outside consulting, consulting business, or freelance work ______

Self-owned business (other than consulting) ______

Professional performances or exhibitions ______

Speaking fees, honoraria ______

Royalties or commissions ______

Any other employment ______

Non-monetary compensation (e.g., food, housing, car) *(Please give approximate value)* ______

Other sources of earned income (PLEASE SPECIFY:)

______ ______

______ ______

G. SOCIODEMOGRAPHIC CHARACTERISTICS

41. Your gender:

Male	1
Female	2

42. In what year were you born? 19______

43. Are you of Hispanic descent--for example, Mexican, Mexican-American, Chicano, Cuban, Puerto Rican, etc.?

Yes	1
No	2

44. What is your race? *(PLEASE CIRCLE ONE NUMBER)*

American Indian, Aleut, Eskimo	1
Asian or Pacific Islander (Japanese, Chinese, Filipino, Asian Indian, Korean, Vietnamese, Hawaiian, Guamanian, Samoan, other Asian)	2
Black	3
White	4
Other (PLEASE SPECIFY BELOW)	5

____

45. What is your current marital status? *(PLEASE CIRCLE ONE NUMBER)*

Single, never married	1
Married	2
Separated	3
Divorced	4
Widowed	5

46. Of what country are you currently a citizen?

USA	1
Other (PLEASE SPECIFY BELOW)	2

____

47. What is the highest level of formal education completed by your mother, your father, and your spouse? *(PLEASE CIRCLE ONE NUMBER FOR EACH PERSON)*

	Mother	Father	Spouse
Don't know/not applicable	0	0	0
Less than high school	1	1	1
High school diploma	2	2	2
Some college	3	3	3
Associate degree	4	4	4
Bachelor's degree	5	5	5
Master's degree	6	6	6
Doctorate or professional degree (e.g., PhD, MD, DVM, JD/LLB)	7	7	7
Other (PLEASE SPECIFY BELOW)	8	8	8

____

H. ACADEMIC INTERESTS AND VALUES

48. Please indicate the extent to which you agree or disagree with each of the following statements. *(PLEASE CIRCLE ONE NUMBER FOR EACH STATEMENT)*

	DISAGREE		AGREE	
	Strongly	Somewhat	Somewhat	Strongly
General issues:				
It is important for faculty to participate in governing their institutions.	1	2	3	4
Faculty promotions should be based at least in part on formal evaluations by students.	1	2	3	4
The tenure system in higher education should be preserved.	1	2	3	4
Teaching effectiveness should be the primary criterion for promotion of college faculty.	1	2	3	4
Research/publications should be the primary criterion for promotion of college faculty.	1	2	3	4
Faculty should be free to present in class any idea they consider relevant.	1	2	3	4
Collective bargaining is likely to bring overall higher salaries and improved benefits for faculty.	1	2	3	4

(continued)

	DISAGREE		AGREE		
	Strongly	Somewhat	Somewhat	Strongly	
Private consulting in areas directly related to a faculty member's field of research or teaching should be restricted.	1	2	3	4	
It is important to encourage students to consider a career in higher education.	1	2	3	4	
Institutional Issues:					
The administrative function is taking an increasingly heavy share of available resources at this institution.	1	2	3	4	
					Does not apply
At this institution, research is rewarded more than teaching.	1	2	3	4	0
Female faculty members are treated fairly at this institution.	1	2	3	4	0
Faculty who are members of racial or ethnic minorities are treated fairly at this institution.	1	2	3	4	0

Please indicate *your opinion* regarding whether each of the following has worsened, improved, or stayed the same in recent years.
(PLEASE CIRCLE ONE NUMBER FOR EACH ITEM)

	Worsened	Stayed the same	Improved	Have no idea
The quality of undergraduate students in higher education	1	2	3	9
The quality of graduate students in my field	1	2	3	9
The quality of students who choose to pursue academic careers in my field	1	2	3	9
The opportunities junior faculty have for advancement in my field	1	2	3	9
The professional competence of individuals entering my academic field	1	2	3	9
Respect for the academic profession, generally	1	2	3	9

THANK YOU VERY MUCH FOR YOUR PARTICIPATION

Please return this completed questionnaire in the enclosed franked envelope to:
National Survey of Postsecondary Faculty
SRI International, P.O. Box 2124, Menlo Park, CA 94025-2124

BEST COPY AVAILABLE

CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES

AGRICULTURE

001	Agribusiness & Agricultural Production
002	Agricultural, Animal, Food, & Plant Sciences
003	Renewable Natural Resources, including Conservation, Fishing, & Forestry
004	Other Agriculture

ARCHITECTURE & ENVIRONMENTAL DESIGN

005	Architecture & Environmental Design
006	City, Community, & Regional Planning
007	Interior Design
008	Land Use Management and Reclamation
009	Other Arch. & Environmental Design

ART

010	Art History and Appreciation
011	Crafts
012	Dance
013	Design (other than Arch. or Interior)
014	Dramatic Arts
015	Film Arts
016	Fine Arts
017	Music
018	Music History and Appreciation
019	Other Visual & Performing Arts

BUSINESS

020	Accounting
021	Banking & Finance
022	Business Administration & Management
023	Business Administrative Support (e.g., Bookkeeping, Office Management, Secretarial)
024	Human Resources Development
025	Organizational Behavior
026	Marketing & Distribution
027	Other Business

COMMUNICATIONS

028	Advertising
029	Broadcasting and Journalism
030	Communications Research
031	Communication Technologies
032	Other Communications

COMPUTER SCIENCE

033	Computer & Information Sciences
034	Computer Programming
035	Data Processing
036	Systems Analysis
037	Other Computer Science

EDUCATION

038	Education, General
039	Basic Skills
040	Bilingual/Cross-cultural education
041	Curriculum & Instruction
042	Education Administration
043	Education Evaluation and Research
044	Educational Psychology
045	Special Education
046	Student Counseling & Personnel Svcs.
047	Other Education

Teacher Education

048	Pre-Elementary
049	Elementary
050	Secondary
051	Adult & Continuing
052	Other General Teacher Ed. Programs
053	Teacher Education in Specific Subjects

ENGINEERING

054	Engineering, General
055	Civil Engineering
056	Electrical, Electronics, & Communication Engineering
057	Mechanical Engineering
058	Other Engineering
059	Engineering-Related Technologies

ENGLISH AND LITERATURE

060	English, General
061	Composition and Creative Writing
062	American Literature
063	English Literature
064	Linguistics
065	Speech, Debate, & Forensics
066	English as a Second Language
067	English, Other

FOREIGN LANGUAGES

068	Chinese (Mandarin, Cantonese, or Other Chinese)
069	French
070	German
071	Italian
072	Latin
073	Japanese
074	Other Asian
075	Russian or Other Slavic
076	Spanish
077	Other Foreign Languages

CODES FOR MAJOR FIELDS OF STUDY AND ACADEMIC DISCIPLINES (continued)

	HEALTH SCIENCES
078	Allied Health Technologies & Services
079	Dentistry
080	Health Services Administration
081	Medicine, including Psychiatry
082	Nursing
083	Pharmacy
084	Public Health
085	Veterinary Medicine
086	Other Health Sciences
087	**HOME ECONOMICS**
088	**INDUSTRIAL ARTS**
089	**LAW**
090	**LIBRARY & ARCHIVAL SCIENCES**
	NATURAL SCIENCES
091	Life or Physical Sciences, General
092	Astronomy
093	Biology
094	Botany
095	Chemistry
096	Geological Sciences
097	Physics
098	Physiology
099	Zoology
100	Other Natural Sciences
101	**MATHEMATICS & STATISTICS**
102	**MILITARY STUDIES**
103	**MULTI/INTERDISCIPLINARY STUDIES**
104	**PARKS & RECREATION**
105	**PHILOSOPHY, RELIGION, & THEOLOGY**
106	**PSYCHOLOGY**
107	**PROTECTIVE SERVICES** (e.g., Criminal Justice, Fire Protection)
108	**PUBLIC AFFAIRS** (e.g., Community Services, Public Administration, Public Works, Social Work)
109	**SCIENCE TECHNOLOGIES**
	SOCIAL SCIENCES
110	Social Sciences, General
111	Anthropology
112	Archeology
113	Area & Ethnic Studies
114	Demography
115	Economics
116	Geography
117	History
118	International Relations
119	Political Science & Government
120	Sociology
121	Other Social Sciences
	VOCATIONAL TRAINING
	Construction Trades
122	Carpentry
123	Electrician
124	Plumbing
125	Other Construction Trades
	Consumer, Personal, & Misc. Services
126	Personal Services (e.g., Barbering, Cosmetology)
127	Other Consumer Services
	Mechanics and Repairers
128	Electrical & Electronics Equipment Repair
129	Heating, Air Conditioning, & Refrigeration Mechanics & Repairers
130	Vehicle & Mobile Equipment Mechanics & Repairers
131	Other Mechanics and Repairers
	Precision Production
132	Drafting
133	Graphic & Print Communications
134	Leatherworking and Upholstering
135	Precision Metal Work
136	Woodworking
137	Other Precision Production Work
	Transportation and Material Moving
138	Air Transportation (e.g., Piloting, Traffic Control, Flight Attendance, Aviation Management)
139	Land Vehicle & Equipment Operation
140	Water Transportation (e.g., Boat and Fishing Operations, Deep Water Diving, Marina Operations, Sailors and Deckhands)
141	Other Transportation and Material Moving
999	**OTHER**

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NOTES AND OVERHEADS
from an Office of Educational Research and Improvement (OERI)
Research Seminar

TEACHING AND THE FACULTY REWARD STRUCTURE

presented by

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March 23, 1992

DRAFT: Not for general distribution. These notes and tables represent the first public reporting of these data. A more complete technical report will be released by NCTLA in June, 1992. For a copy of that report contact NCTLA at Penn State. For questions about this report contact Dr. Fairweather or Dr. Maryellen Weimer, Director of Dissemination, NCTLA (814) 865-6346.

Faculty Profile Project
Preliminary Report
Project No.: R117G10037
CFDA No.: 84.117G

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PRELIMINARY DRAFT:

NOT FOR GENERAL RELEASE

Teaching and the Faculty Reward Structure

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March 23, 1992

OERI National Meeting
Washington, D.C.

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Teaching and the Faculty Reward Structure

"Faculty and the reward structure" has an appealing ring to it. Public concern about the cost of higher education and the value received for expensive tuition, anecdotes about attending college to work with renowned professors only to be taught by graduate students, and debates within the academy about curriculum content and whether or not faculty have the time to spend on such instruction-related activities add to the lore about the limited role of teaching in the faculty reward structure.

Yet most of the research to date is mythical or at best attitudinal in content. Studies of the reward structure typically focus on promotion and tenure, and on faculty and administrator attitudes about the relative importance of teaching and research in decision-making (e.g., Carnegie, 1989). As one of many examples, Bowen & Schuster (1986) found that faculty perceived their rewards were dependent on research, not teaching, and that the differences between faculty from distinct types of institutions, even those with a strong emphasis historically on teaching, was narrowing.

Promotion and tenure, however, comprise only one aspect of the faculty reward structure. Promotion and tenure happen at most three times during a faculty career: Promotion to associate professor from assistant professor, tenure (which often is combined with promotion to associate professor), and promotion to full professor. Further, the academic culture surrounding the promotion and tenure process, including the complex sharing of responsibilities between peers (faculty), who make the initial decision in most cases, and administrators, whose authority in promotion and tenure varies by institution (Russell et al., 1989), makes remediation of perceived inequities difficult. In the complex "P & T" decision apparatus, should faculty and administrators interested in revitalizing the role of teaching in academe focus on administrative leadership, faculty cultures, the hiring process, or a combined approach?

In contrast, compensation is an often ignored part of research on the reward structure. Unlike promotion and tenure, compensation is an annual "reward," reflecting at least in part the value placed by the institution or department on the work of individual faculty. Although studies of compensation abound (e.g., Hansen. 1986; Wagner, 1986), the focus has been primarily descriptive (e.g., have faculty salaries kept pace with inflation) or on the effect of salary disparities between higher education and industry, and between academic fields, on potential faculty shortages (Bowen & Sosa, 1990; Fairweather, 1989; Lozier & Dooris, 1988).

Today I discuss the relationship between faculty activities--teaching and instruction, research and scholarship, administration, public service--and compensation to examine the implicit emphasis given by academic institutions on various faculty behaviors through compensation. Potentially relevant situational information, such as type of institution, program area, rank and length of service, and so on, are also examined. The intent is to provide empirical evidence about the messages that faculty receive about the importance of their work lives through compensation, and the potential of these messages for improving (or not improving) the quality of instruction in higher education.

The Study

Population and Sample

In 1987-88, the National Survey of Postsecondary Faculty, sponsored by the National Center for Education Statistics, examined a nationally representative sample of more than 11,000 faculty from 428 colleges and universities. More than 7,000 faculty responded, a response rate of 76 percent. Included were full- and part-time faculty in institutions ranging from 2-year colleges to research universities. The survey, which will be repeated in 1992-1993, provides a comprehensive examination of the status of the professoriate.

For this paper, I examine only full-time, tenure-track faculty from 4-year institutions (n = 4,332; weighted n = 329,945). The range of institutions includes the full range found in the Carnegie typology: Research universities, which receive the majority of federal funding for research and which graduate the most Ph.D.s; doctoral-granting universities, which also support research and doctoral training but not to the degree found in research universities; comprehensive institutions, which focus primarily on undergraduate education with some masters-level programs (typically in professional fields such as nursing, business, or engineering); liberal arts colleges; and other 4-year institutions, which in this survey are predominantly professional schools of medicine and engineering.

Analyses and Presentation of Results

I focus today on basic salary from the institution, presenting the results first by general characteristics which might affect compensation, including institutional type; personal demographic characteristics; and length of service. I then breakdown compensation by type of faculty activity, overall and by type of institution. Finally, I present correlations and multiple regression models to examine the combined impact of demographic characteristics, length of service, and faculty activities on basic salary.

Study Variables

[Insert Table 1 here]

Income

Basic salary from institution

"For the calendar year 1987, what were your gross earnings before taxes for your basic salary at this institution?"

Total income from institution

The sum of basic salary, other income (e.g., summer) from teaching at the institution, supplements not included in the basic salary, and other income from the institution.

Demographic Characteristics

Age

Age during Fall term 1987.

Gender

Male or female.

Ethnic/Racial minority

Respondent is a member of a racial/ethnic minority if (a) caucasian and of Hispanic descent, (b) American Indian, (c) Asian/Pacific Islander, or (d) Black.

Highest degree awarded

Having a doctorate or professional degree, or not (masters and bachelors/other are the other categories).

Program Area

The primary field of study in which a faculty member works.

Length of Service

Time in current rank

The number of years since achieving the rank held at the institution in question during Fall term 1987.

Years in current position

By Fall term 1987, the number of years in the current position at the institution in question, irrespective of changes in rank.

Teaching/Instruction

NOTE: For teaching what I use are measures of how faculty spend their time and general measures of productivity, such as student contact hours. I recognize that these are *not* measures of instructional quality, which is being explored in depth in our National Center for Teaching, Learning, and Assessment. Nevertheless, these generic measures of productivity provide insights into how faculty are rewarded for their efforts.

Percent of time spent on teaching/instruction

[Note: For all percentage of time variables, the percentage is based on a summary of about 20 total activities, not just an aggregate e.g., "how much time did you spent teaching?".]

Of the total hours spent working per week, the percentage of time spent on working with student organizations; teaching, advising, and supervising students; and grading papers, preparing courses, and developing new curricula.

Student contact hours

For Fall term 1987, the sum across all courses taught of the number of hours a class met per week times the number of students enrolled in the class.

Hours in class per week

For Fall term 1987, the total hours spent in class per week.

Taught only undergraduate students

Taught only lower or upper division undergraduate students in all courses taught during Fall term 1987.

Taught only graduate students

Taught only graduate students in all courses taught during Fall term 1987 (does not apply to liberal arts colleges).

Research/Scholarship

Percent of time spent on research/scholarship

Of the total hours spent working per week, the percent spent on research, scholarship, preparing or reviewing articles or books, and attending or preparing to attend professional meetings or conferences; giving performances in the fine or applied arts; or seeking outside funding for research.

Total refereed publications, career

For the entire career, the total number of refereed articles, chapters in edited volumes, textbooks, other books, monographs, and reviews of books, articles, or creative works.

Principal investigator, externally-funded research project

During Fall term 1987, being principal investigator or co-principal investigator on at least one research project funded by the federal government, state or local governments, foundations or other nonprofit organizations, or industry. This excludes individuals whose sole support for research was an institutional grant.

Administration

Percent of time spent on administration

Of the total hours spent working per week, the percent spent on administrative activities

Community/Public Service

Percent of time spent on community/public service*

Of the total hours spent working per week, the percent spent on doing paid or unpaid community or public service

---

* Included in the denominator for total workload are consulting and professional development activities.

Results

Note: When I say that a relationship "differs" I mean that the finding is statistically significant. I have additional tables at Penn State, which have standard errors, t-test results, and the like should you be interested.

What characteristics differentiate faculty salaries?

Institutional Type [Insert Table 2 here]

Notes: Highest pay in research and other 4-year (which are primarily medical and engineering institutions)

Program Area [Insert Table 3 here]

Notes: Compared with the overall national mean, faculty in agriculture/home economics, business, and natural sciences are paid at the national average. Faculty in engineering and health sciences are paid above the national average. Faculty in education, the fine arts, the humanities, social sciences, and other fields are paid below the national average.

Demographic Characteristics and Length of Service

Rank [Insert Table 4 here]

Notes: As we would expect, pay increases with rank. This pattern holds true overall and by type of institution.

Highest Degree Obtained [Insert Table 5 here]

Notes: Not surprisingly, having a doctorate or professional degree is worth the most money, both overall and by type of institution.

Time in Rank [Insert Table 6 here]

Notes: As expected, pay increases with time in rank overall; this varies a bit by type of institution.

Age [Insert Table 7 here]

Notes: Compensation varies directly with an increase in age, although there are no significant differences after reaching ages 55-59. The pattern varies slightly by type of institution.

Years in Current Position [Insert Table 8 here]

Notes: Varies by years of current position up to 8-14 years of service, but not thereafter; the pattern varies by type of institution.

Gender [Insert Table 9 here]

Notes: Male income is greater than female income, overall and for each type of institution.

Racial or Ethnic Minority [Insert Table 10 here]

Notes: Overall there is no difference in basic salary for minority and nonminority faculty. Within type of institution, minorities are paid less only in liberal arts colleges. Recall that minority includes Hispanic, American Indian, Asian/Pacific Islander, and African-American.

What behaviors/activities differentiate faculty salaries?

In examining the relationships between teaching, research/scholarship, administration, service with basic salary, I search for patterns which suggest whether or not faculty activities are rewarded differentially. Also, I look for evidence about whether teaching is (a) equally rewarded with other activities; (b) a neutral factor in the reward structure with research being overemphasized; or (c) teaching is a negative factor in compensation, i.e., people who spend more time teaching get paid less

Teaching/Instruction

Percent of time spent on teaching/instruction [Insert Tables 11 and 11A here]

Notes: Overall: The more time you spend on teaching, the less the compensation. This is a linear relationship.

Type of Institution: The same pattern holds for faculty in research universities, doctoral-granting institutions, and comprehensive colleges. Time spent on teaching is not related to basic salary at liberal arts colleges.

Hours in class per week [Insert Tables 12 and 12A here]]

Notes: Overall: In general, the more hours in class per week, the lower the pay.

Type of Institution: The overall linear pattern holds for faculty in comprehensives and other 4-year schools. There is a U-shaped distribution for faculty in research universities. The pattern is a dichotomoy at doctoral-granting and liberal arts colleges, with the key break point being less than 6 hours and less than 8 hours per week, respectively.

Student Contact Hours [Insert Table 13 here]

Notes: Overall: The distribution is a U-shaped curve, where the highest income is earned by those with the least number of student contact hours, dropping through the mid-range of contact hours, and rising again for those with the most contact hours.

Type of Institution: The pattern holds for faculty in research universities. The distribution for faculty in comprehensive colleges shows the highest pay for those with less than 110 student contact hours with little difference between salaries for higher numbers of contact hours. Student contact hours are not related to basic salary at doctoral-granting institutions, liberal arts colleges, or other 4-year institutions.

Teaching only undergraduates or only graduates [Insert Tables 14 and 14A here]

Notes: Overall: Faculty who teach only graduate students get paid the most.

Type of Institution: This pattern holds for research, doctoral, and comprehensive institutions.

Research/Scholarship

Percent of time spent on research/scholarship [Insert Tables 15 and 15A here]

Notes: Overall: The greater the time spent on research, the higher the compensation. This pattern is the opposite of the one for percent time spent on teaching and instruction.

Type of Institution: This pattern holds for doctoral-granting institutions but not for others. At research universities and comprehensive institutions and other 4-year schools, only the faculty most committed to research--34% or more of their time--have a significantly higher salary. Time spent on research is not related to basic salary at liberal arts colleges.

Total refereed publications (career) [Insert Tables 16 and 16A here]

Notes: Overall: Publications include refereed journal articles, books, textbooks, monographs, chapters in edited volumes, and book reviews. The greater the number of refereed publications, the greater the income.

Type of Institution: This pattern does not vary by type of institution.

Principal investigator on externally-funded research project [Insert Tables 17 and 17A here]

Notes: Overall: Being a PI means more money.

Type of Institution: This pattern holds true for all institutions except liberal arts, including comprehensives.

Percent of time spent on administration [Insert Table 18 here]

Notes: Overall: Those in the highest category of time spent on administration get paid the most.

Type of Institution: The pattern is more or less the same across institutional types.

Percent of time spent on service [Insert Table 19 here]

Notes: Overall: Those spending less time on service get paid a bit more.

Type of Institution: This difference does not hold up when examined by type of institution.

Relationships Between Faculty Activities and Basic Salary

Next I present the correlations between faculty activities and compensation. Because univariate analyses are inadequate to give us the full picture, I follow this with a review of regression analysis procedures, particularly the forming of scales prior to analysis, and the regression results. I have presented the results in (hopefully) an easy-to-read format for this type of presentation; I have greater detail on all the analyses which I'd be happy to share at another time.

Correlations [Insert Table 20 here]

Notes: Review the correlations by predictor.

Regression Analyses

Predictors and Predictive Power

I used a principal components analysis (oblique rotation) to combine highly correlated predictors for the regression analyses. In essence this resulted in the use of the same individual indicators as used up to this point with two exceptions: (a) I combined age, time in rank, and years at current position into a "seniority" scale and (b) found that time spent on teaching was an "exchange" variable with time spent on research, i.e., that the more you did of one the less you did of the other. The latter led to developing a scale called "more research/less teaching" where a positive relationship with the composite means "positively related to spending time on research at the expense of teaching," and a negative relationship means the reverse.

[Insert Table 21 here]

For the most part, the regression models were highly predictive, accounting for between .30 and .50 of the variance in basic salary across the various analyses.

Type of Institution

Research University [Insert Table 22 here]

Notes: Research/administration orientation, although hours in class per week is rewarded. Seniority/male count heavily.

Doctoral [Insert Table 23 here]

Notes: Similar to research university faculty.

Comprehensives [Insert Table 24 here]

Notes: Similar to research university! (although PI less important). Note publications and graduate student teaching orientation.

Liberal Arts [Insert Table 25]

Notes: Similar to research university! Note emphasis on more research/less teaching, publications, and negative relationship between hours in class per week with compensation.

Other 4-year [Insert Table 26 here]

Notes:

Heavy research/scholarship orientation.

Program Area

Agriculture/Home Economics [Insert Table 27 here]

Notes: The only predictors which are not demographics are PI and publications.

Business [Insert Table 28 here]

Notes: Publications are rewarded, hours in class/week are punished.

Education [Insert Table 29 here]

Notes: Male/seniority count; so do publications. Hours in class/week is a negative, although student contact hours are positively related to compensation.

Engineering [Insert Table 30 here]

Notes: Research and seniority.

Fine Arts [Insert Table 31 here]

Notes: Seniority and other demographics count the most; note that publications and teaching only graduate students also are significant.

Health Sciences [Insert Table 32 here]

Notes: Senior males, publications and graduate teaching, administration.

Humanities [Insert Table 33 here]

Notes: Seniority counts here. Just about everything else also seems to count--i.e., a more balanced picture--but hours in class/week and percent time on service count negatively.

Natural Sciences [Insert Table 34 here]

Notes: Heavily graduate/research model.

Social Sciences [Insert Table 35 here]

Notes: Seems similar to natural sciences.

Other Fields [Insert Table 36 here]

Notes: A bit more of a mixed bag, although publications, seniority, and time spent on research count the most.

Rank Within Type of Institution

[Note: By looking at rank within type of institution we hold seniority much more constant than in other analyses.]

Research U: Professor [Insert Table 37 here]

Notes: Graduate student/publications/administration.

Research U: Assoc. Prof.

Notes: A bit more balanced; i.e., a high productivity model in all areas. Publications/grad students count heavily, yes, but so do hours in class per week too.

Male counts, but not seniority.

Research U: Asst.Prof.

Notes: Publications/teaching graduate students count the most. Demographics too: Male and minority.

Doctoral U: Professor [Insert Table 38 here]

Notes: Grad students/publications/PI plus seniority.

Doctoral U: Assoc. Prof.

Notes: More balanced: research and graduate students but also hours in class/week and administration. Being a senior male with administrative activities also helps.

Doctoral U: Asst. Prof.

Notes: Only your ethnicity and seniority seem to count.

Comprehensives: Professor [Insert Table 39 here]

Notes: Somewhat balanced, although graduate student and research emphasis are tops. Service is a negative for full professors at regional universities!

Comprehensives: Assoc. Prof.

Notes: Much less graduate student/research/publication emphasis here.

Comprehensives: Asst. Prof.

Notes: Socialized to teach graduate students and spend time on research. Being more senior and male doesn't hurt either, even in the Assistant Prof. rank.

Liberal Arts: Prof. [Insert Table 40 here]

Notes: Senior males paid the most. Startling emphasis on research and publications, and the negative relationship between compensation and teaching only undergraduates.

Liberal Arts: Assoc. Prof.

Notes: Don't spend time in the classroom or you won't make any money! Better to spend your time on research and administration.

Liberal Arts: Asst. Prof.

Notes: Fewer hours in class teaching more students: a great lesson for quality of instruction! Publications count; best not to be a minority faculty member.

Other 4-year Institutions

Notes: Not enough cases to complete analyses for other 4-year category.

Summary

Let me summarize the findings for you. Keep in mind that the NCES-sponsored National Survey of Postsecondary Faculty is being conducted again for the 1992-93 year (done by NORC with Kay Moore and I as consultants); the results, which can be used for comparative analyses, will be available in about a year. The key findings include: Demographics: Seniority (expected to be related to compensation and probably should be) and male (which should not be).

Univariate analyses show teaching as a negative factor in compensation, especially the percent of time spent on teaching and instruction. The emphasis on research, especially teaching graduate students and publications and time spent on research, is positively related to compensation. These patterns hold true overall and for each type of institution.

Regression analyses, especially by institutional type and program area, tend to support these findings. The regressions for rank by type of institution reveal a more complex pattern. For example, associate professors in both research and doctoral universities seem rewarded for high productivity in a variety of areas, including hours spent per week in the classroom as well as the expected research and publication criteria. Similarly, associate professors in comprehensives have a pattern where compensation is less dependent on a graduate/research model.

Overall, however, the domination of research and scholarship is evident. In most cases, teaching productivity is neutral; it's simply not rewarded. The exception, and an important one, is that hours spent on teaching for faculty in liberal arts colleges is negatively related to basic salary.

These results, then, show some support for teaching being negatively related to compensation, some support for it being a neutral factor in compensation, and little for it being an equal factor in compensation.

Another finding of interest concerns the early socialization of faculty. Assistant professors in each type of institution except doctoral granting are socialized to publish, teach graduate students, and generally spend as little time teaching as possible. The socialization of new faculty is a major research program, headed by Bob Menges from Northwestern as part of the National Center on Teaching, Learning, and Assessment. These results provide strong support for further investigation into how we introduce new faculty into the profession.

Finally, these results support the concept of institutional drift--the emulation of the research university model by other types of institutions. Institutional drift is not just reflected in faculty perceptions about promotion and tenure. It is also evidenced directly in the way that colleges and universities pay their faculty.

Table

Variables for Study of Compensation

- Income
  - Basic Salary from Institution
  - Total Income from Institution
- Demographic Characteristics
  - Age
  - Gender
  - Ethnic/Racial Minority
  - Highest Degree Awarded
  - Program Area
- Length of Service
  - Time in Current Rank
  - Years in Current Position

Faculty Profile Project
Notes and Overheads

Project No.: R117G10037
CFDA No.: 84.117G

Variables for Study of Compensation

(Continued)

- Activities (Teaching/Instruction)
  - Percent of Time Spent on Teaching/Instruction
  - Student Contact Hours
  - Hours in Class per Week
  - Taught Only Undergraduate Students
  - Taught Only Graduate Students

- Activities (Research/Scholarship)
  - Percent of Time Spent on Research/Scholarship
  - Total Refereed Publications, Career
  - Principal Investigator, Externally-funded Research Project

- Activities (Administration)
  - Percent of Time Spent on Administration

- Activities (Community/Public Service)
  - Percent of Time Spent on Community/Public Service

Type of Institution

Mean Income for Tenure-Track, Full-Time Faculty: Fall 1987

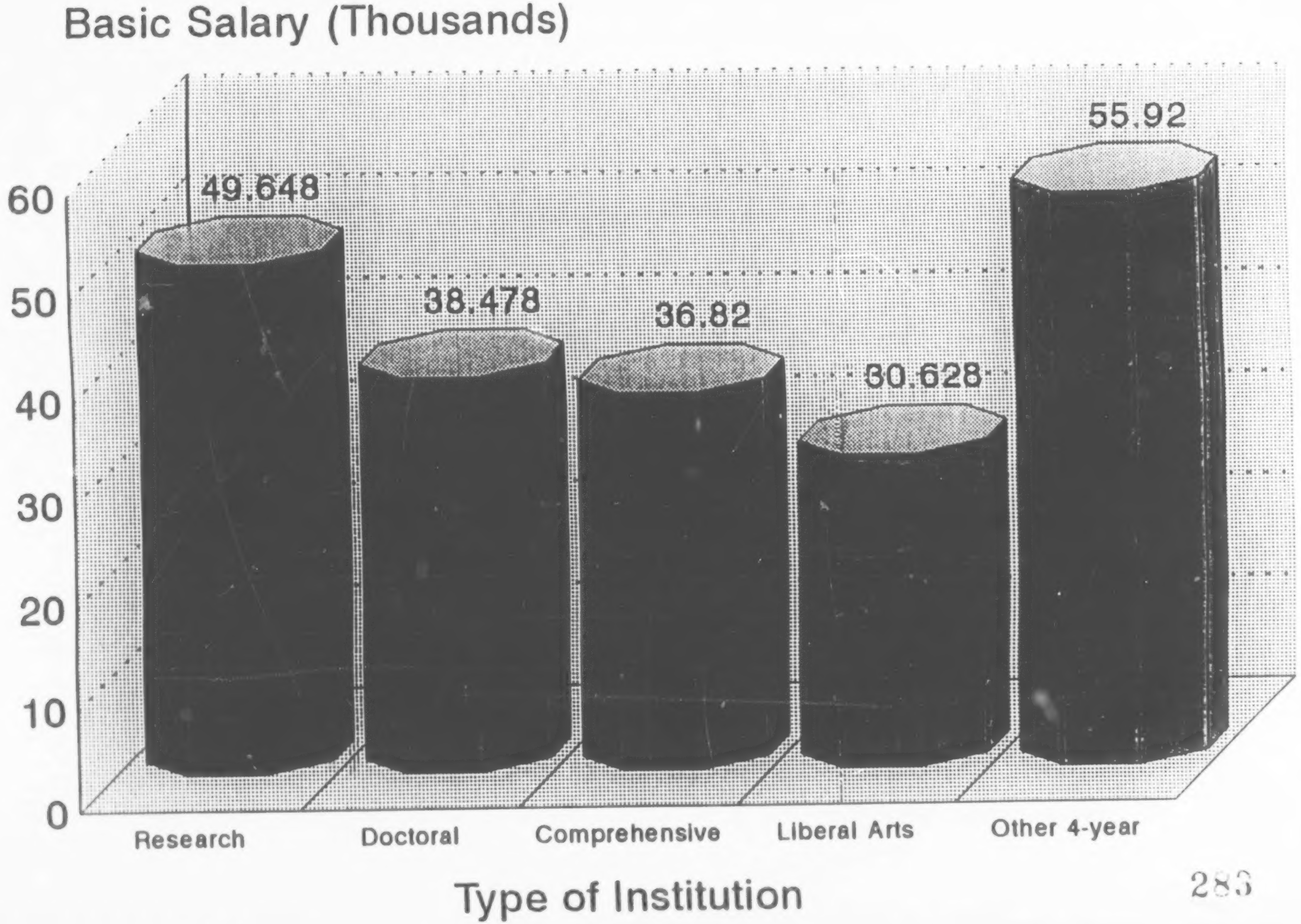


Table 3

Mean Income From Institution

Tenure-track, Full-time Faculty by Program Area: Fall 198

Type of Field	Basic Salary
All institutions	$42,498
SE	286
Agriculture/Home Economics	$42,680
SE	977
Business	$42,235
SE	1,005
Education	$36,034
SE	576
Engineering	$45,828
SE	934
Fine Arts	$34,452
SE	542

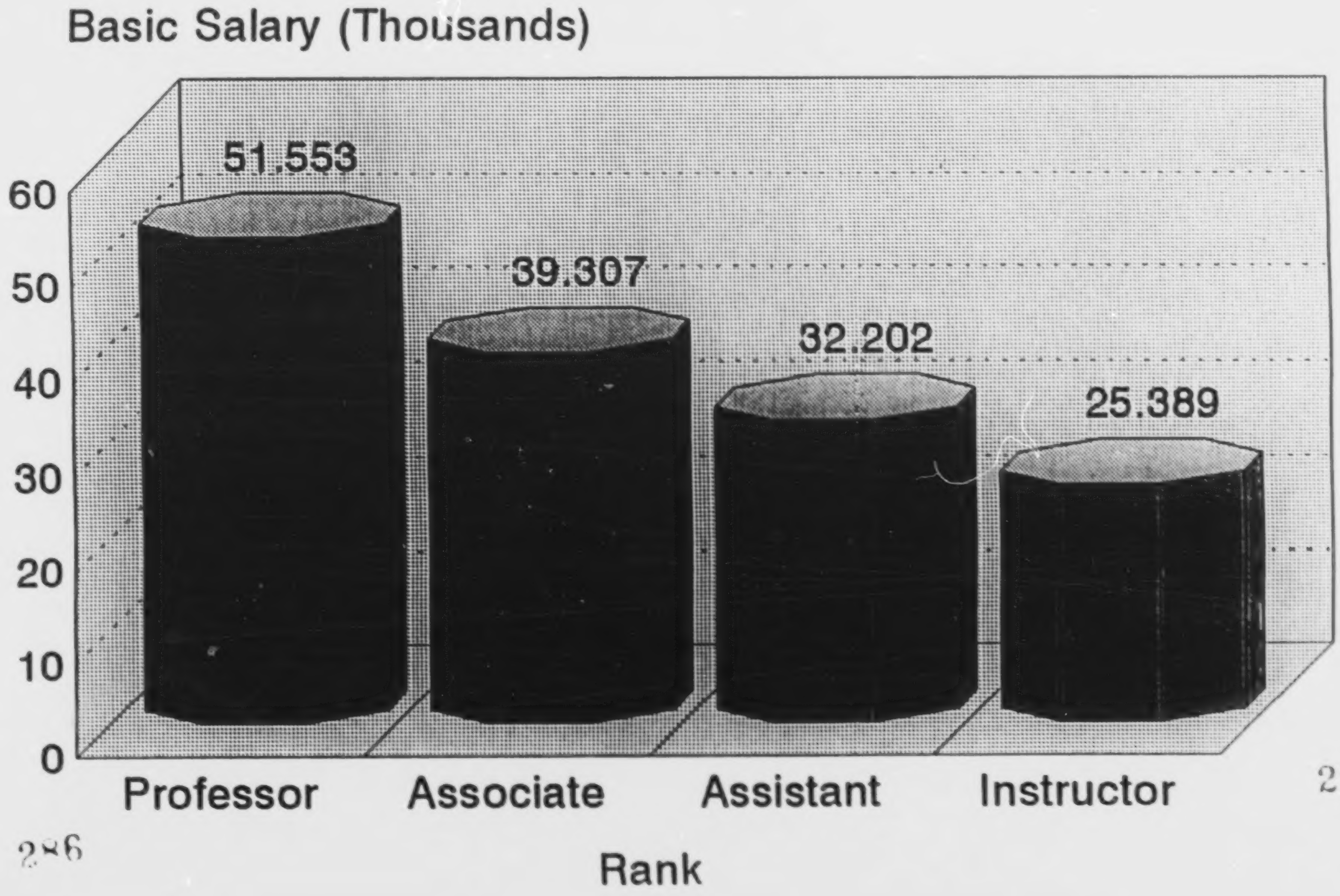
Mean Income from Institution (Continued)

Tenure-track, Full-time Faculty by Program Area: Fall 1987

Type of Field	Basic Salary
Health Sciences	$56,530
SE	1,756
Humanities	$36,267
SE	372
Natural Sciences	$41,825
SE	676
Social Sciences	$38,212
SE	456
Other Fields	$38,685
SE	942

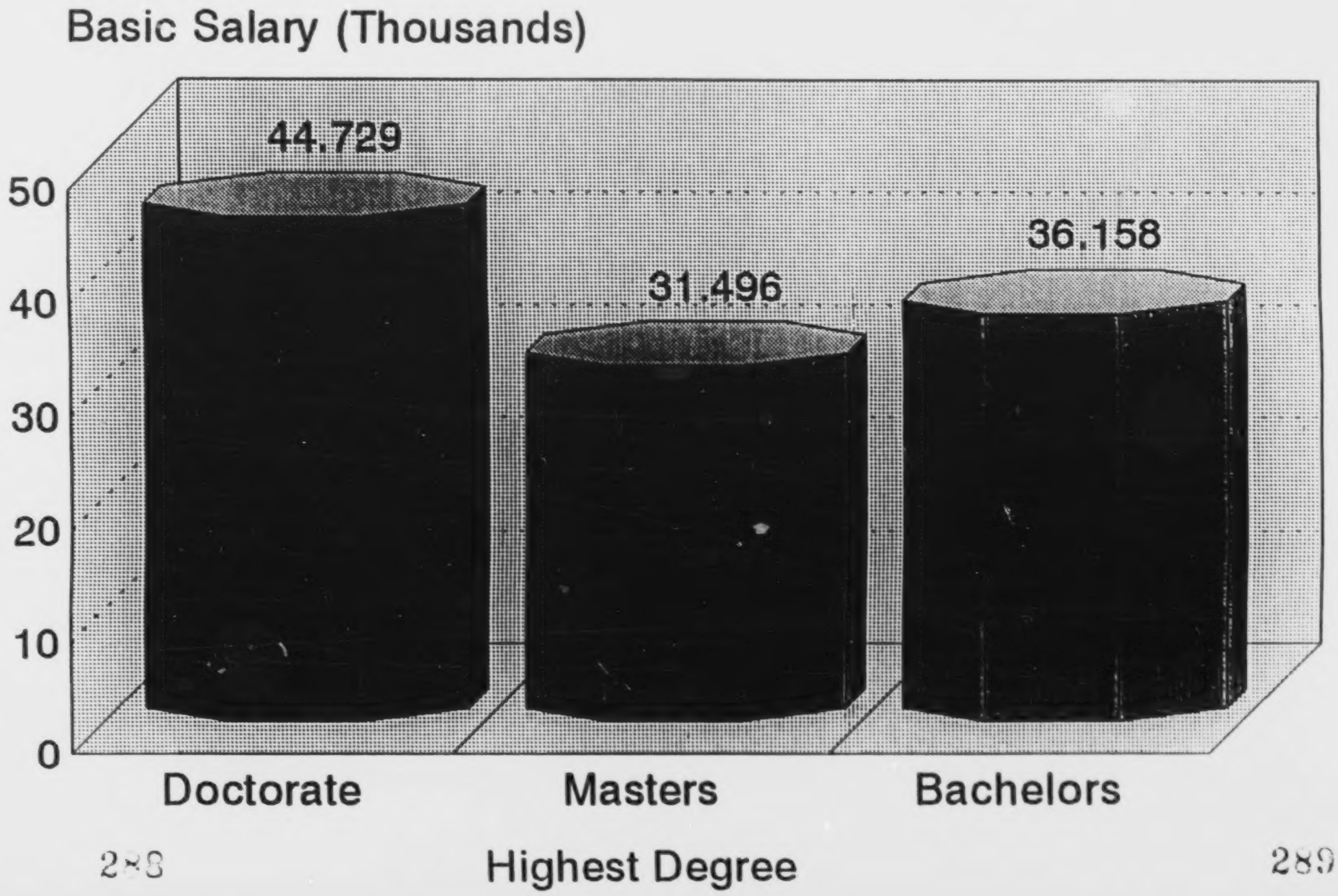
Academic Rank

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



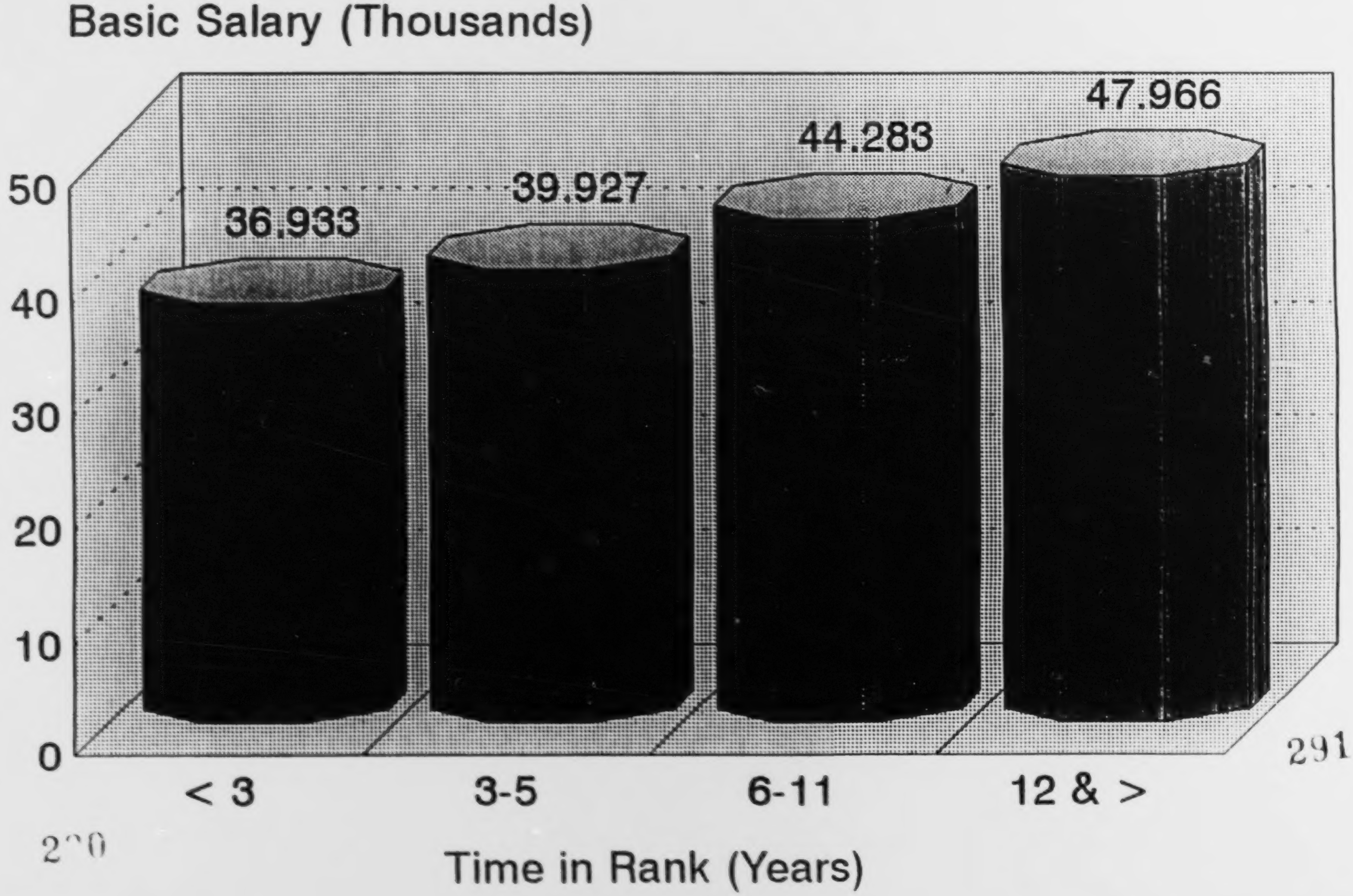
Highest Degree Obtained

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Time in Rank (Years)

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



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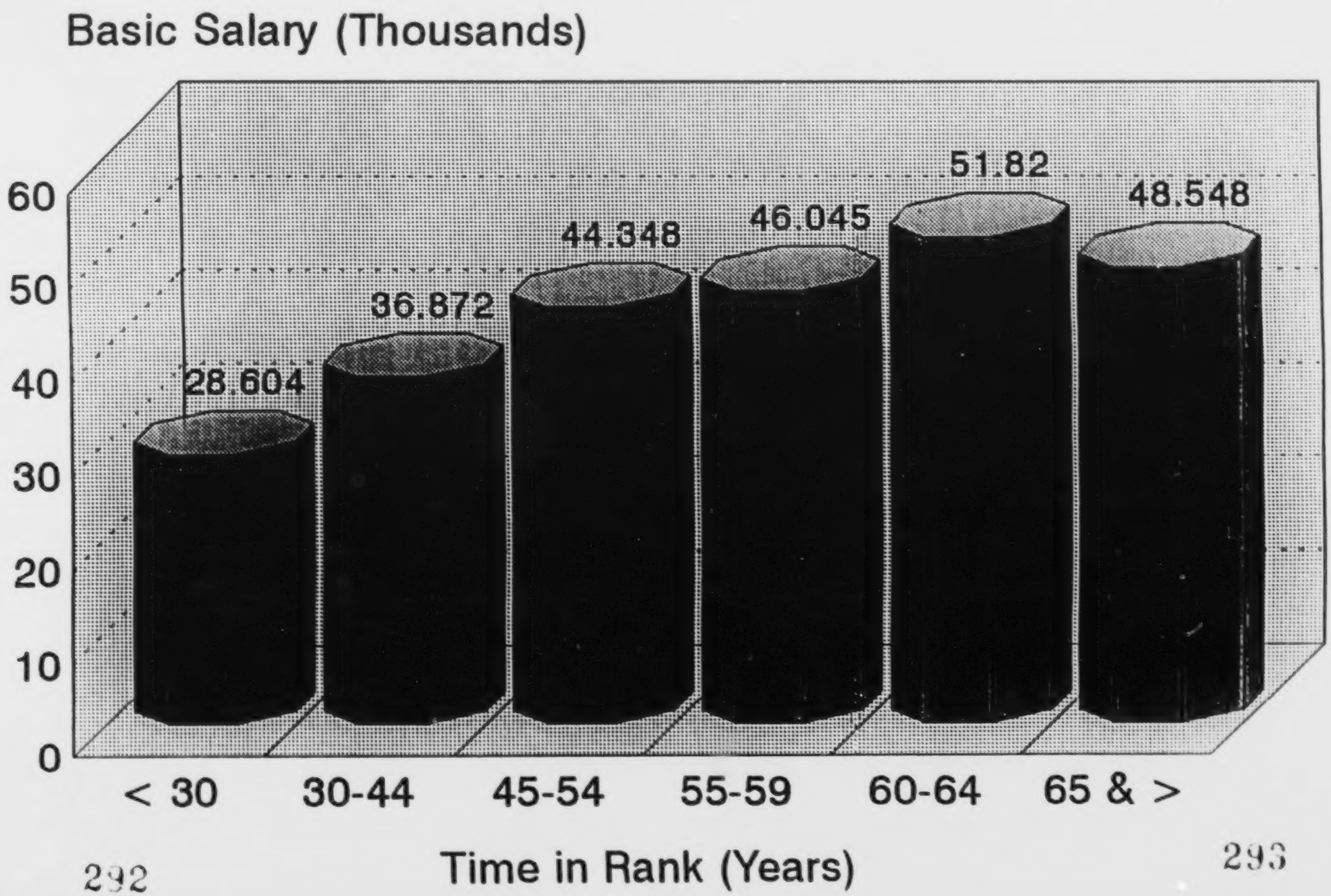
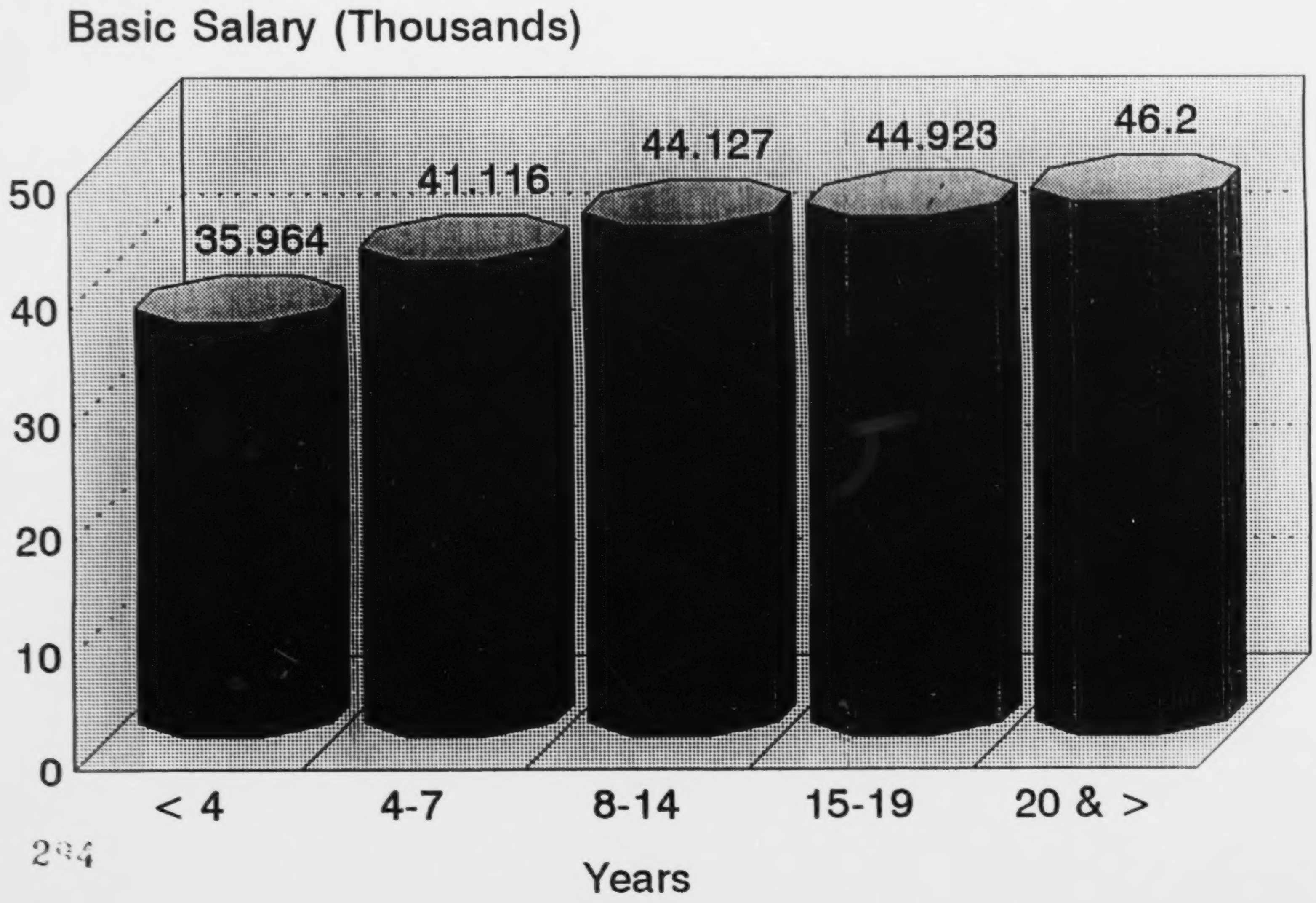
Age Group (Years)

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



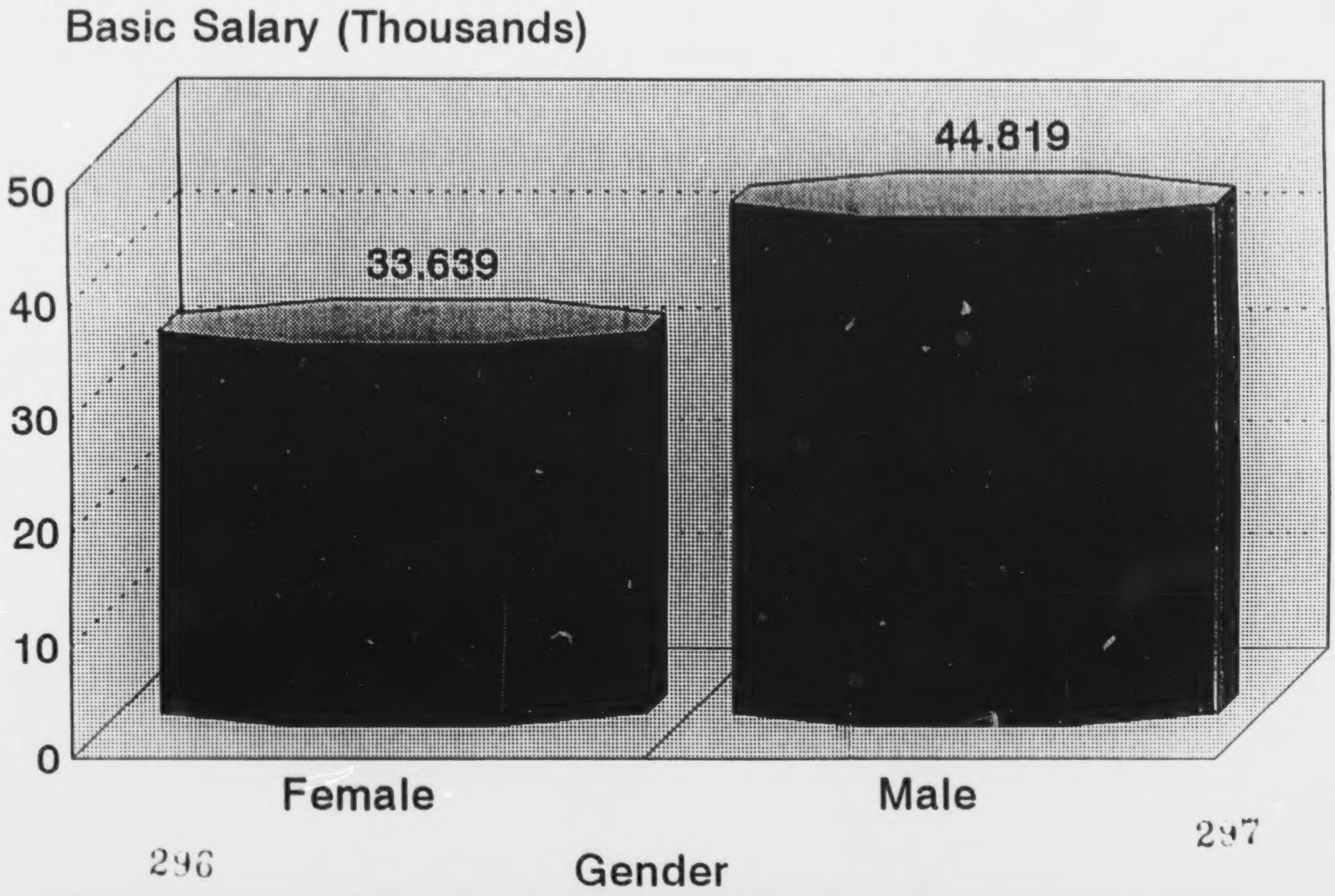
Years in Current Position at Institution

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



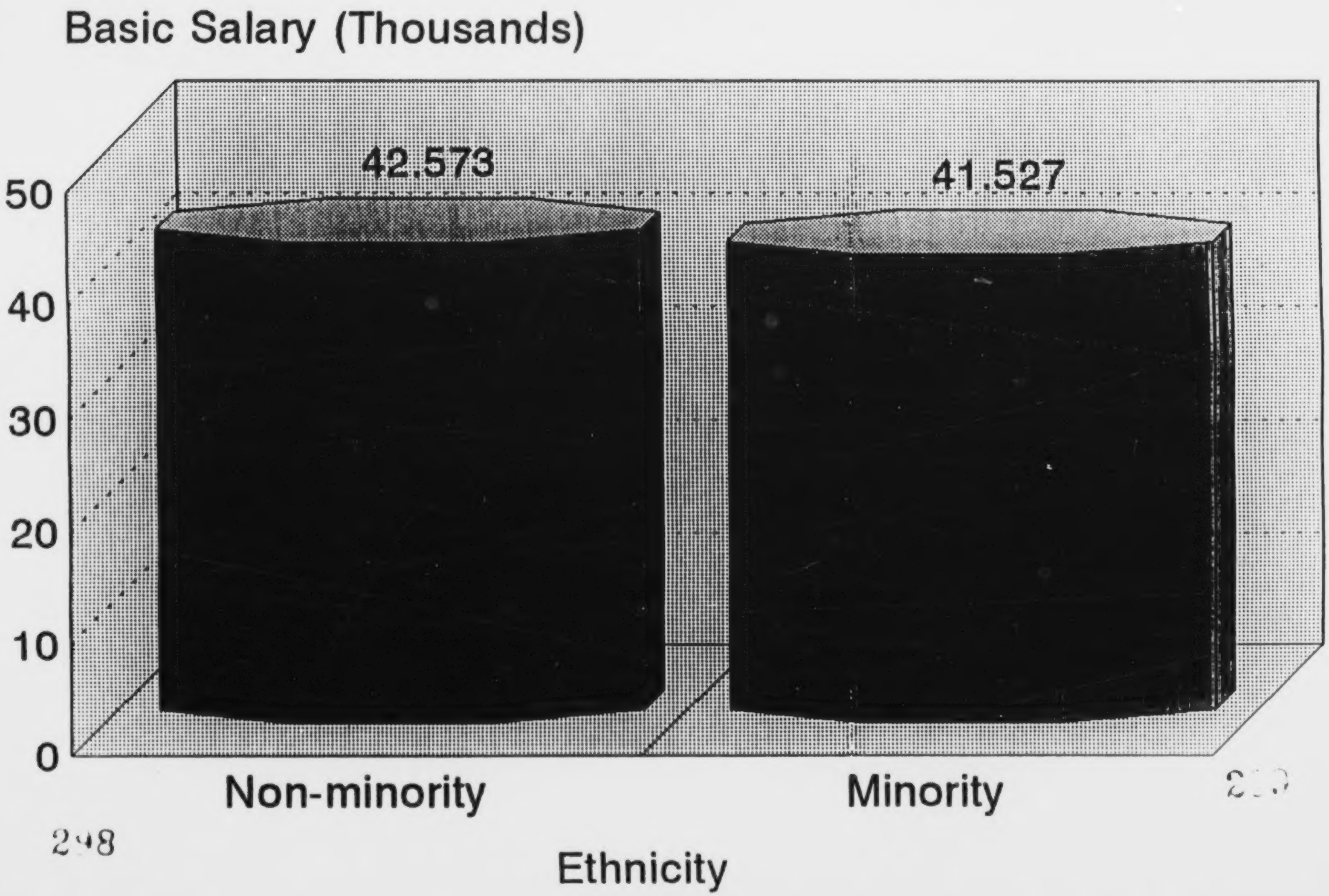
Gender

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



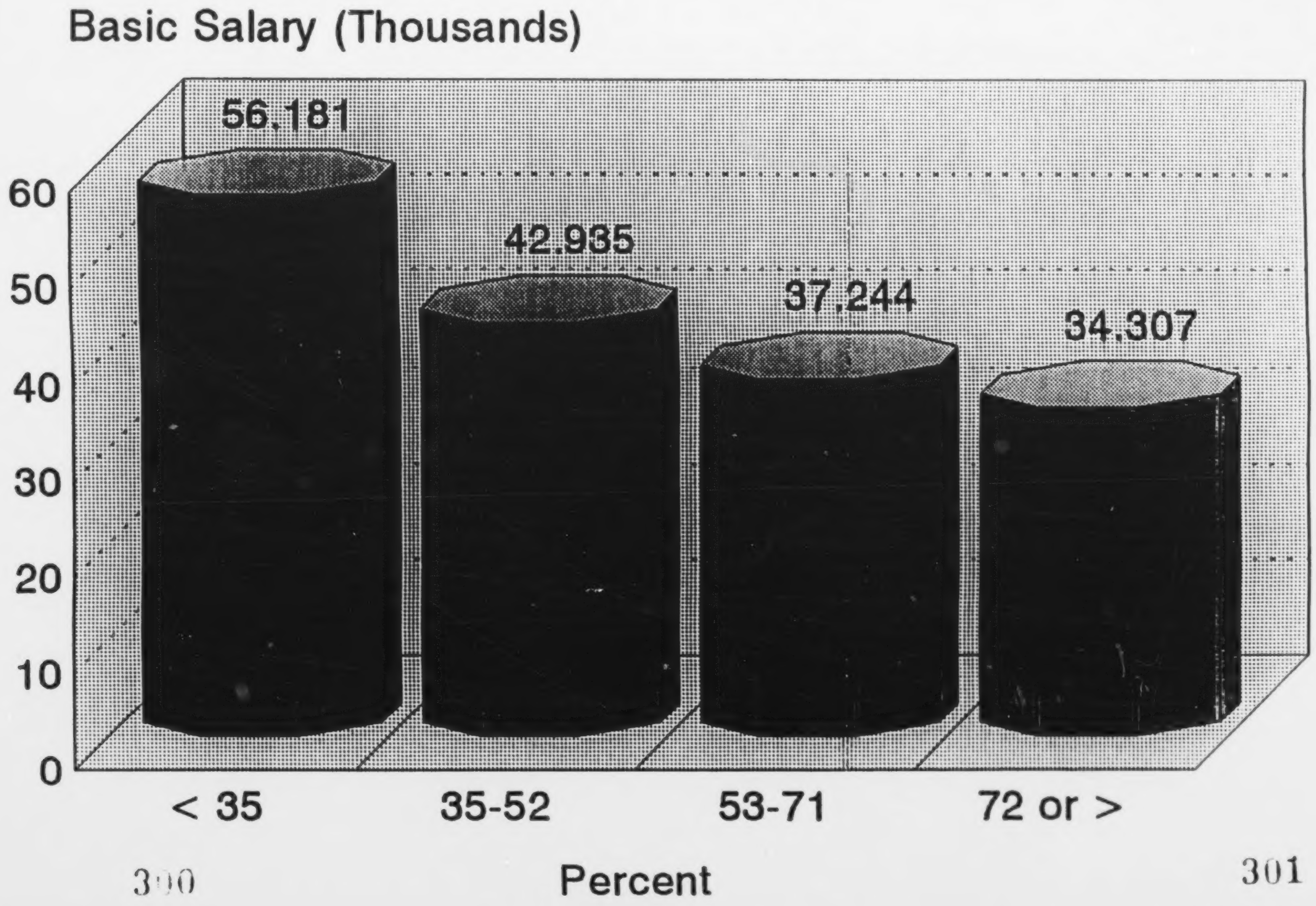
Racial/Ethnic Minority

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



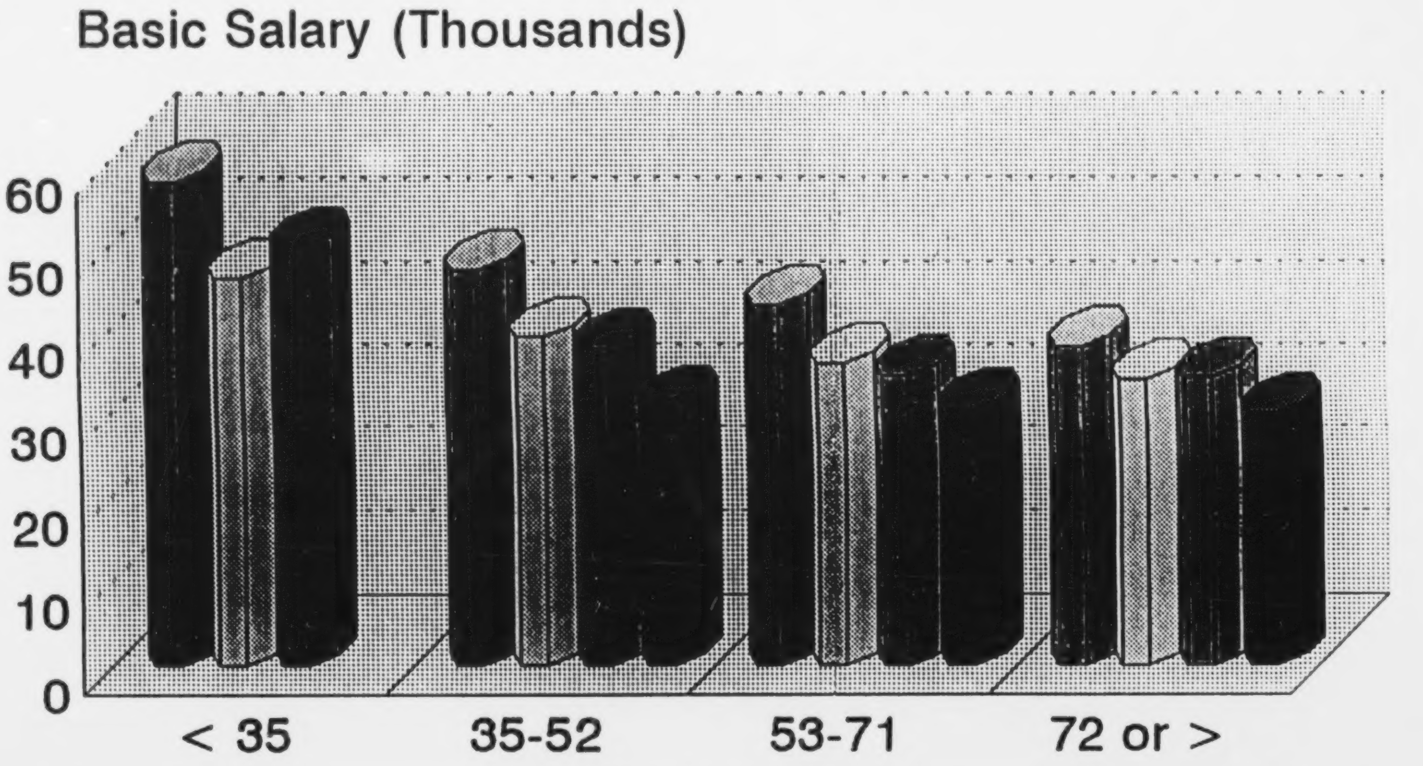
Percent of Time, Teaching/Instruction

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Percent of Time, Teaching Instruction

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

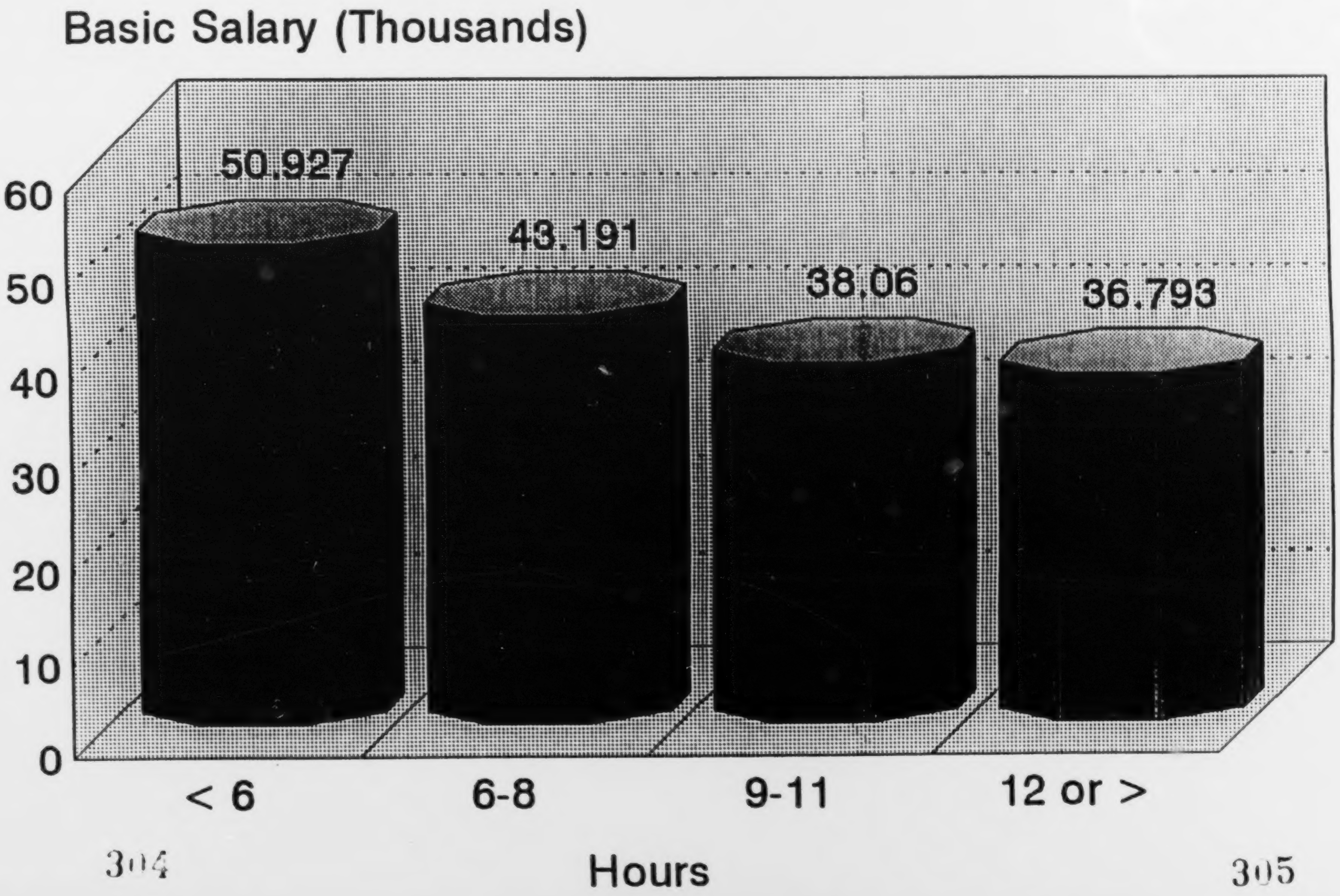


		< 35	35-52	53-71	72 or >
Research	■	57.893	47.445	43.142	38.113
Doctoral	□	46.349	39.18	36.008	34.138
Comprehensive	▦	50.189	37.814	34.551	34.366
Liberal Arts	■		30.908	30.672	30.023

Percent

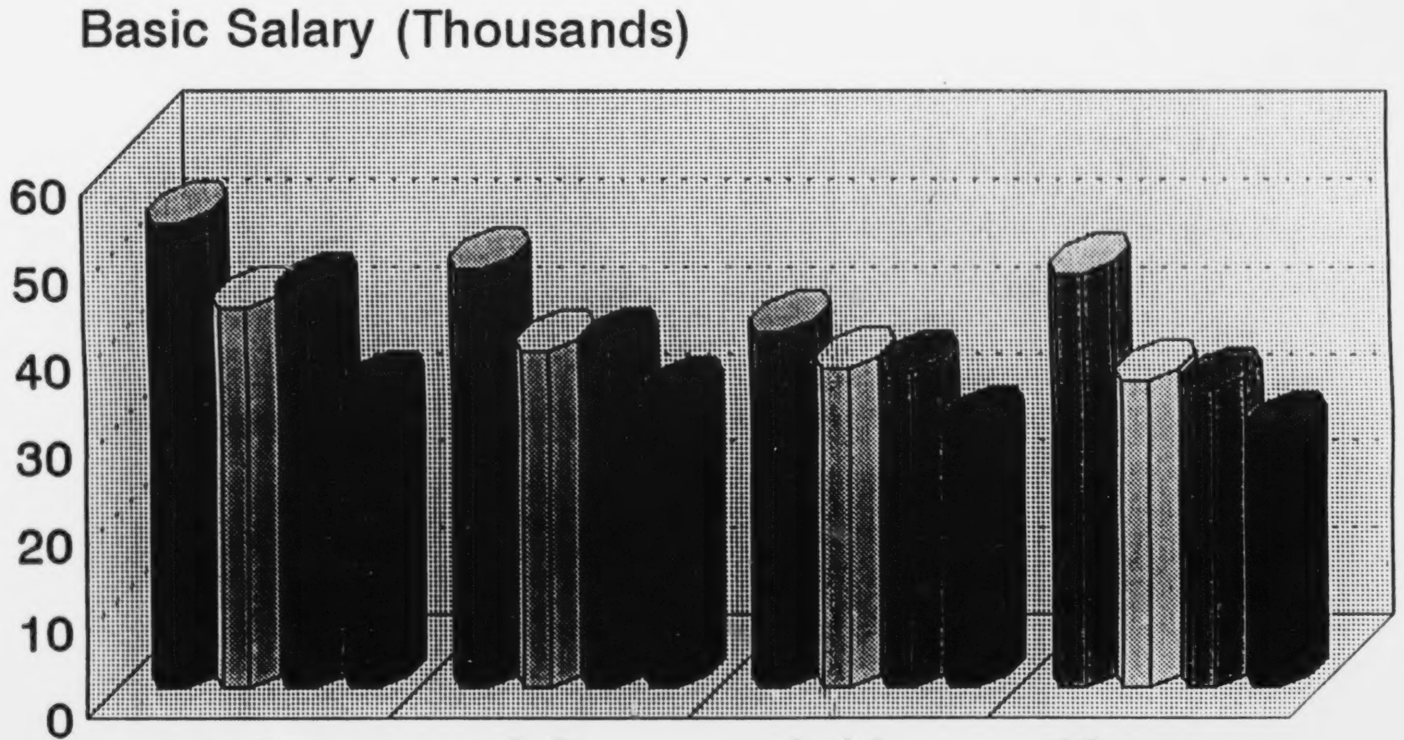
Hours Per Week Teaching Class

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Hours Per Week Teaching Class

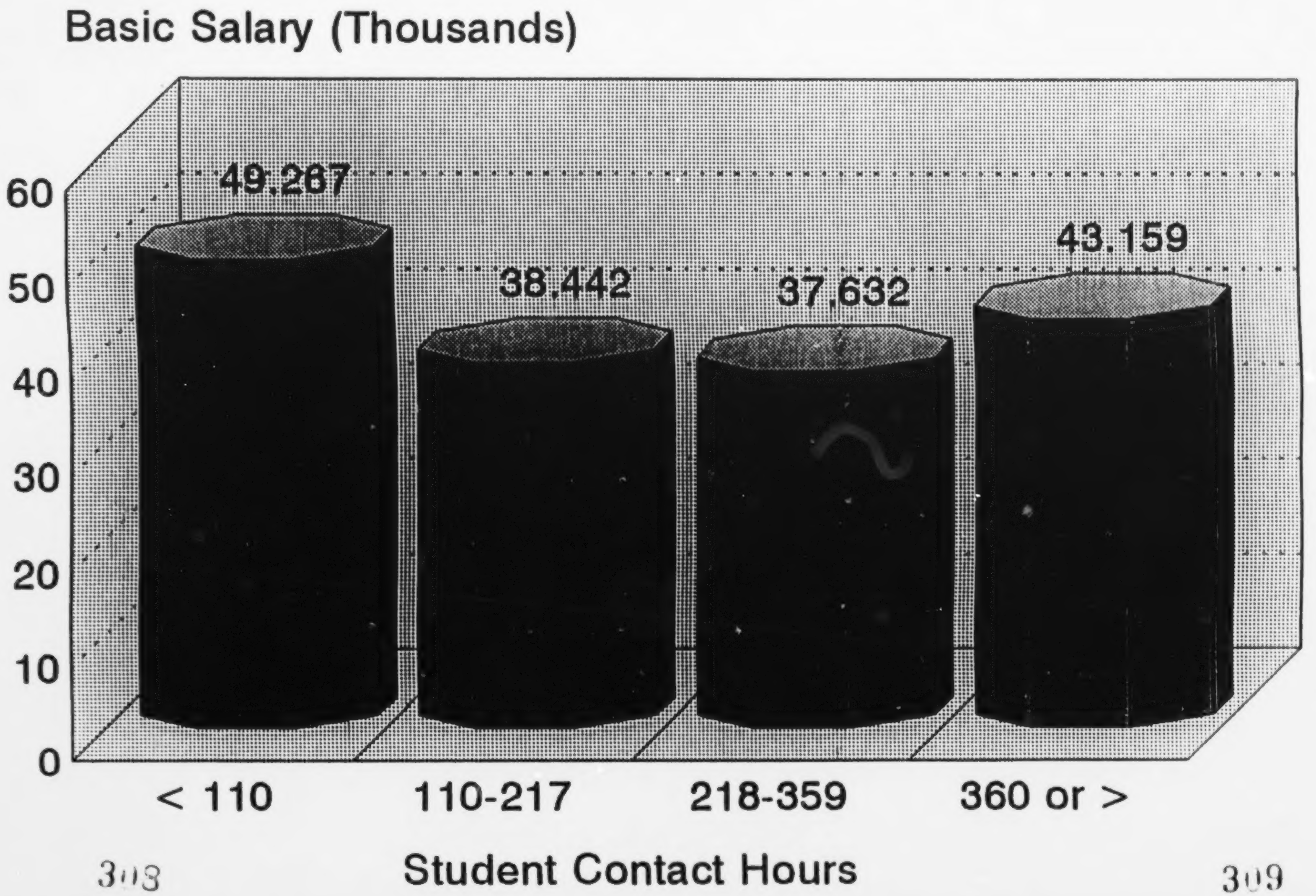
Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 6	6-8	9-11	12 or >
Research	■	53.239	48.1	40.845	47.542
Doctoral	□	43.558	38.679	36.706	35.263
Comprehensive	▨	45.162	38.817	36.181	34.251
Liberal Arts	■	33.897	33.142	29.708	29.139

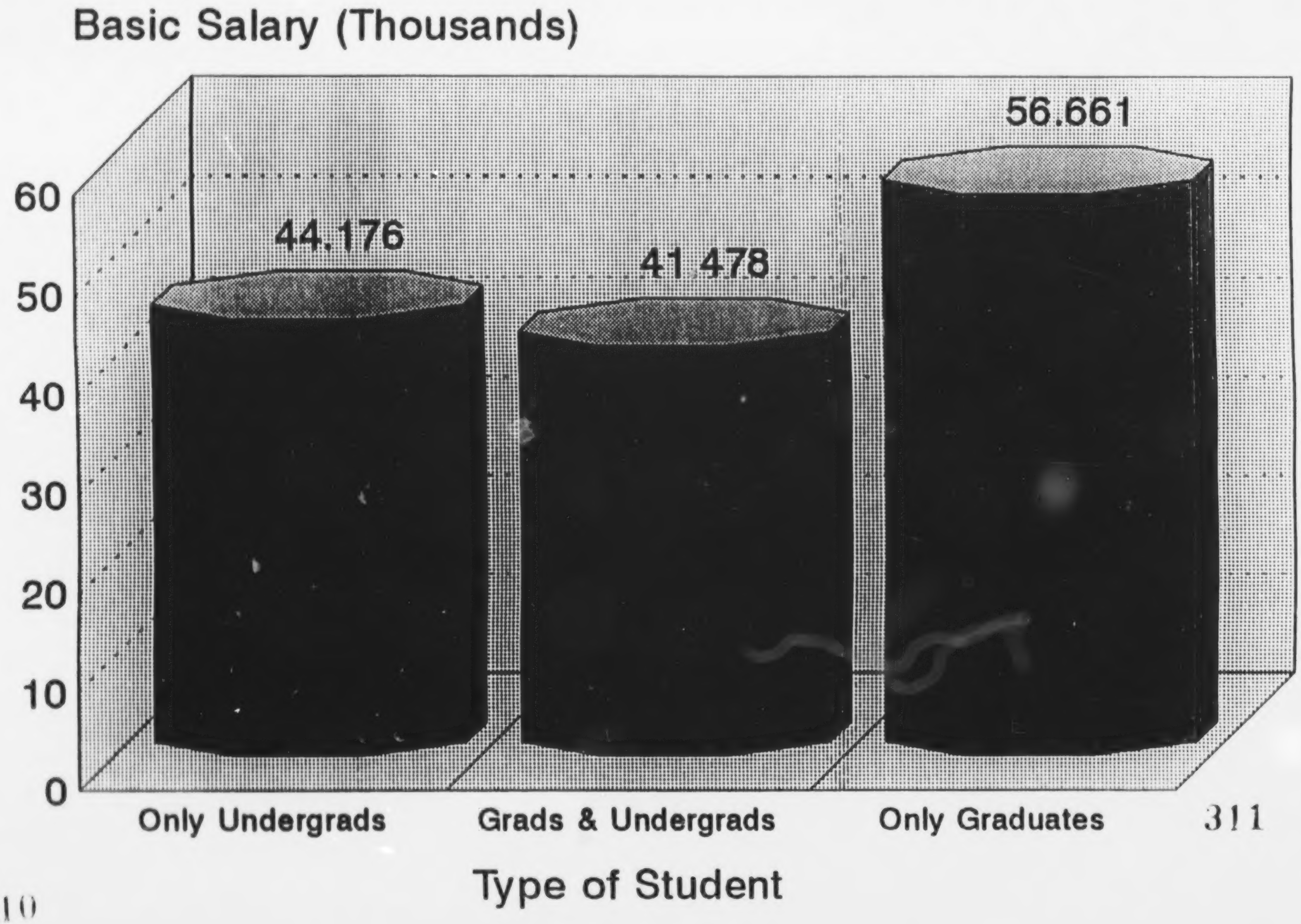
Student Contact Hours Per Semester

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



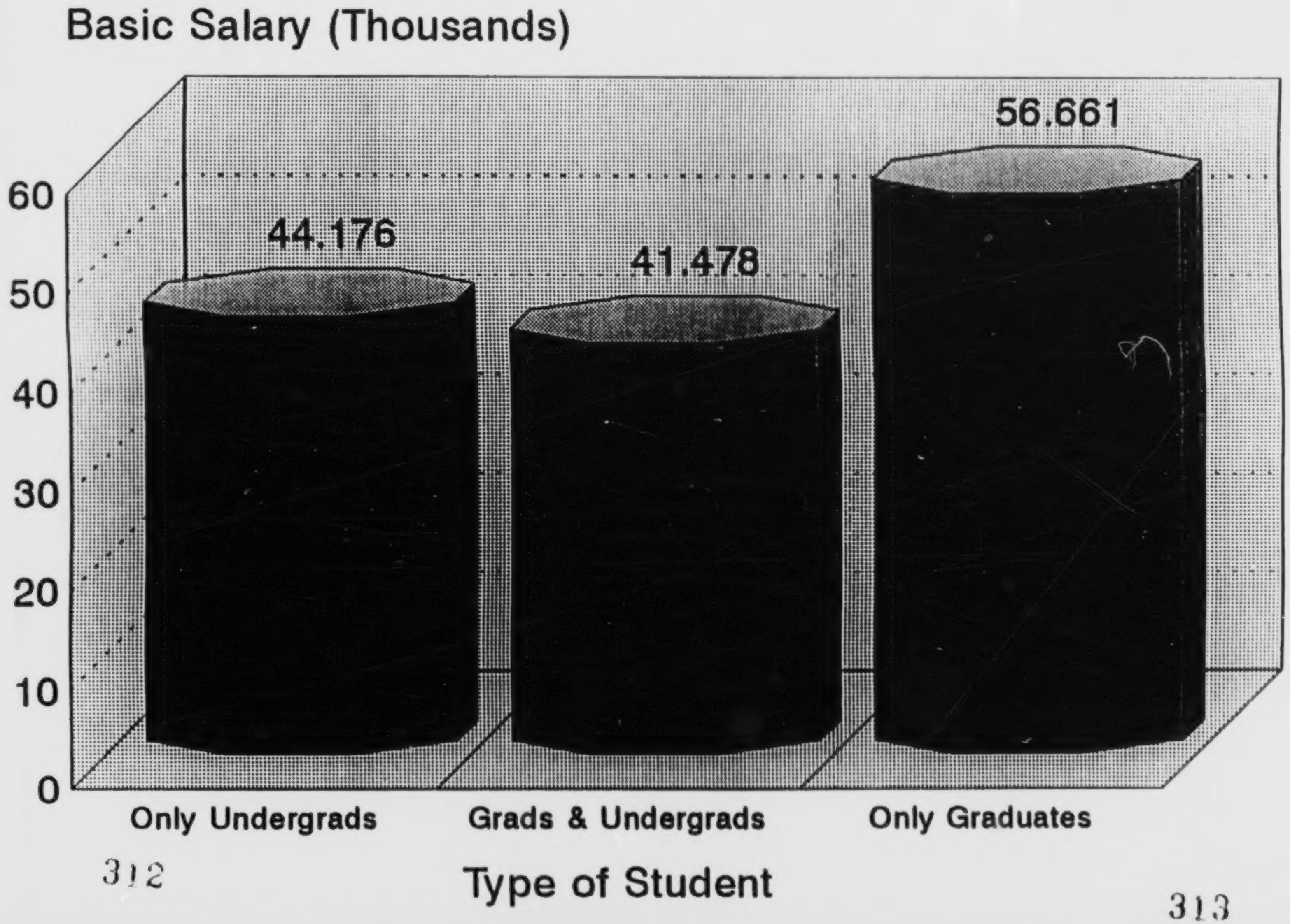
Taught Only Undergraduate or Graduate Students

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



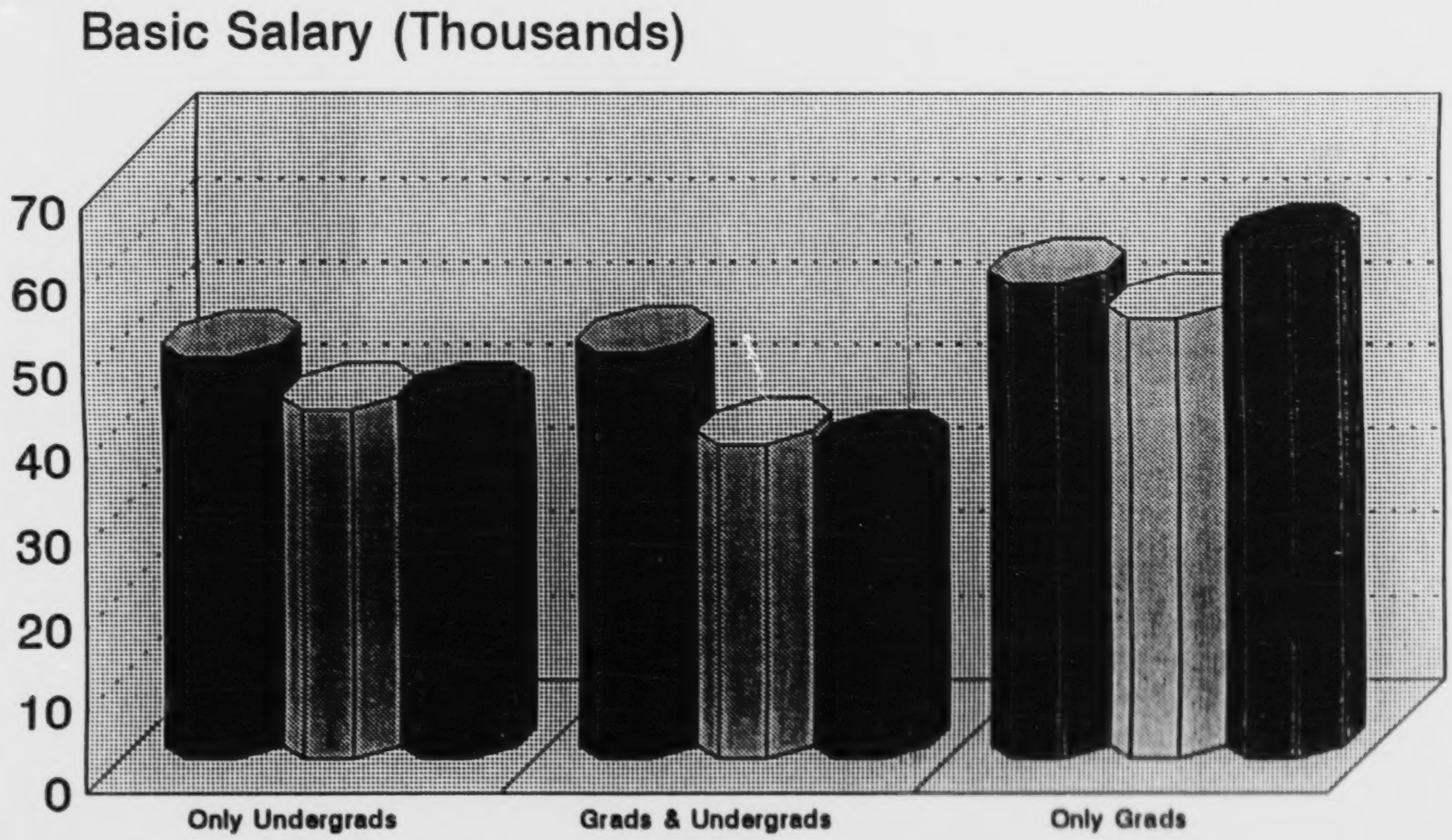
Taught Only Undergraduate or Graduate Students

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Taught Only Undergraduate or Graduate Students

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

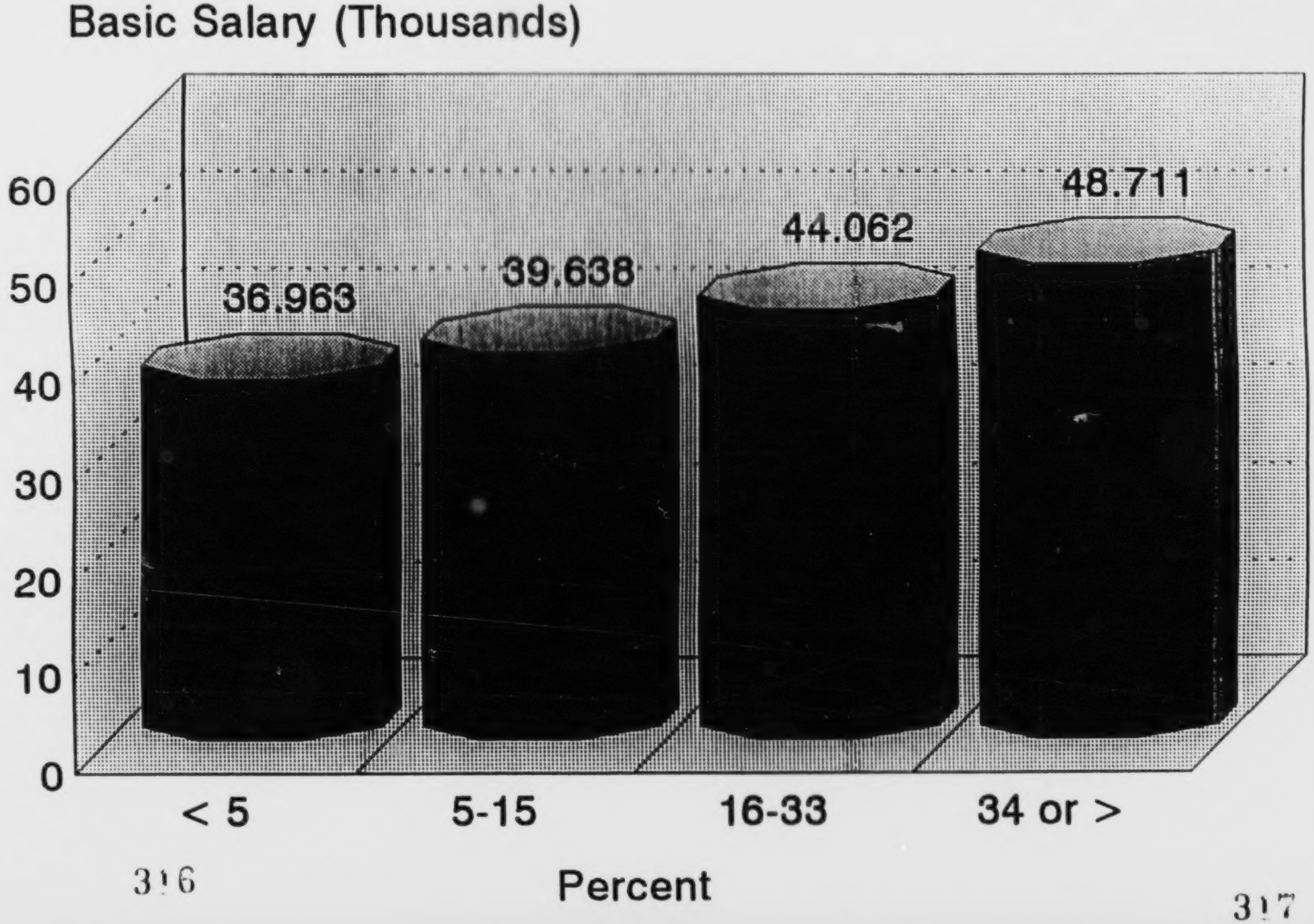


		Only Undergrads	Grads & Undergrads	Only Grads
Research	■	48.223	48.785	57.118
Doctoral	□	42.002	37.795	52.914
Comprehensive	▨	42.129	36.235	61.21

Type of Student

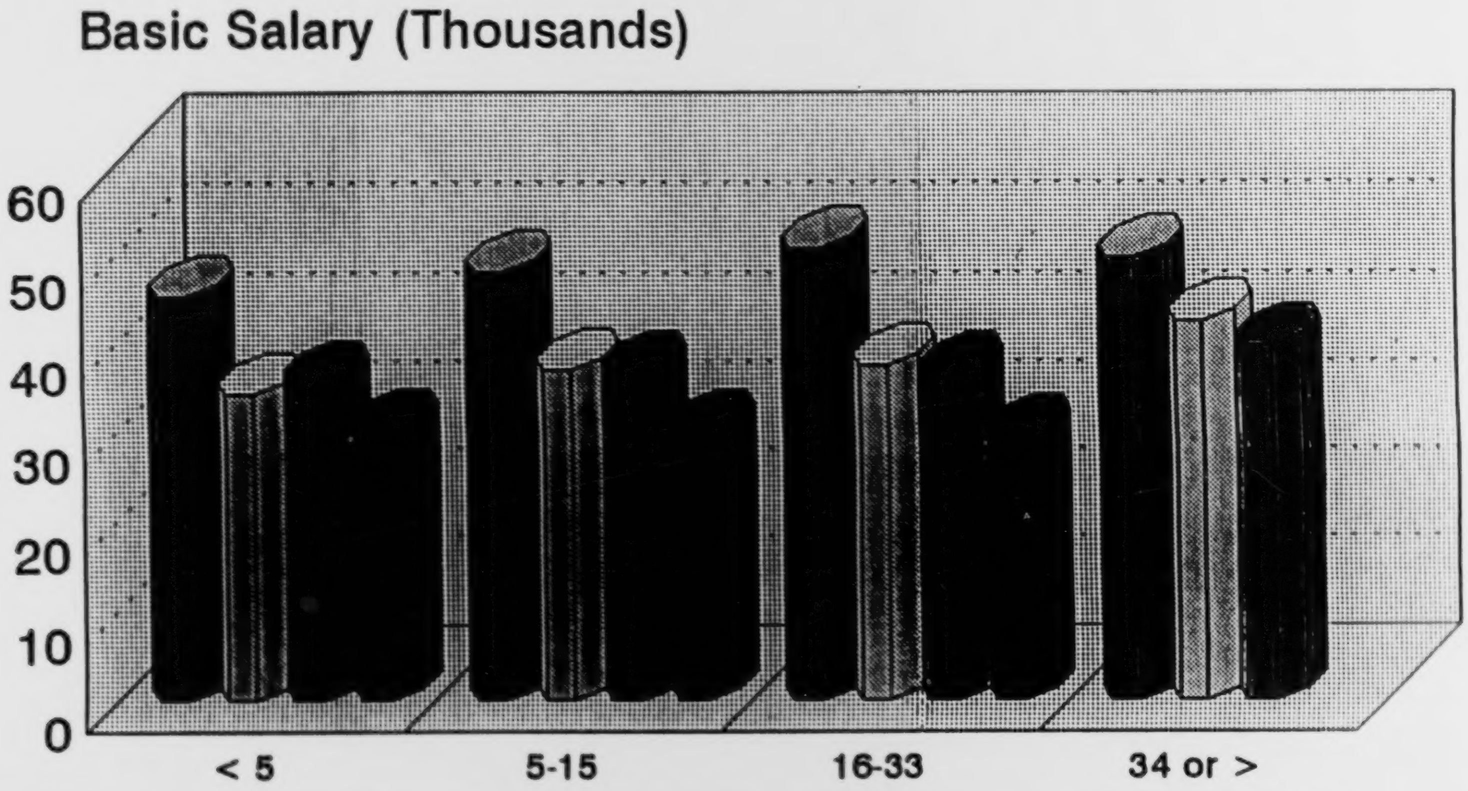
ercent of Time, Research/Scholarship

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Percent of Time, Research/Scholarship

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



		< 5	5-15	16-33	34 or >
Research	■	45.581	48.384	50.99	50.06
Doctoral	□	34.453	37.249	37.799	42.825
Comprehensive	▨	35.805	36.974	36.711	40.044
Liberal Arts	■	30.389	30.281	29.615	

Percent

Table 15

Number of Refereed Publications, Career

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

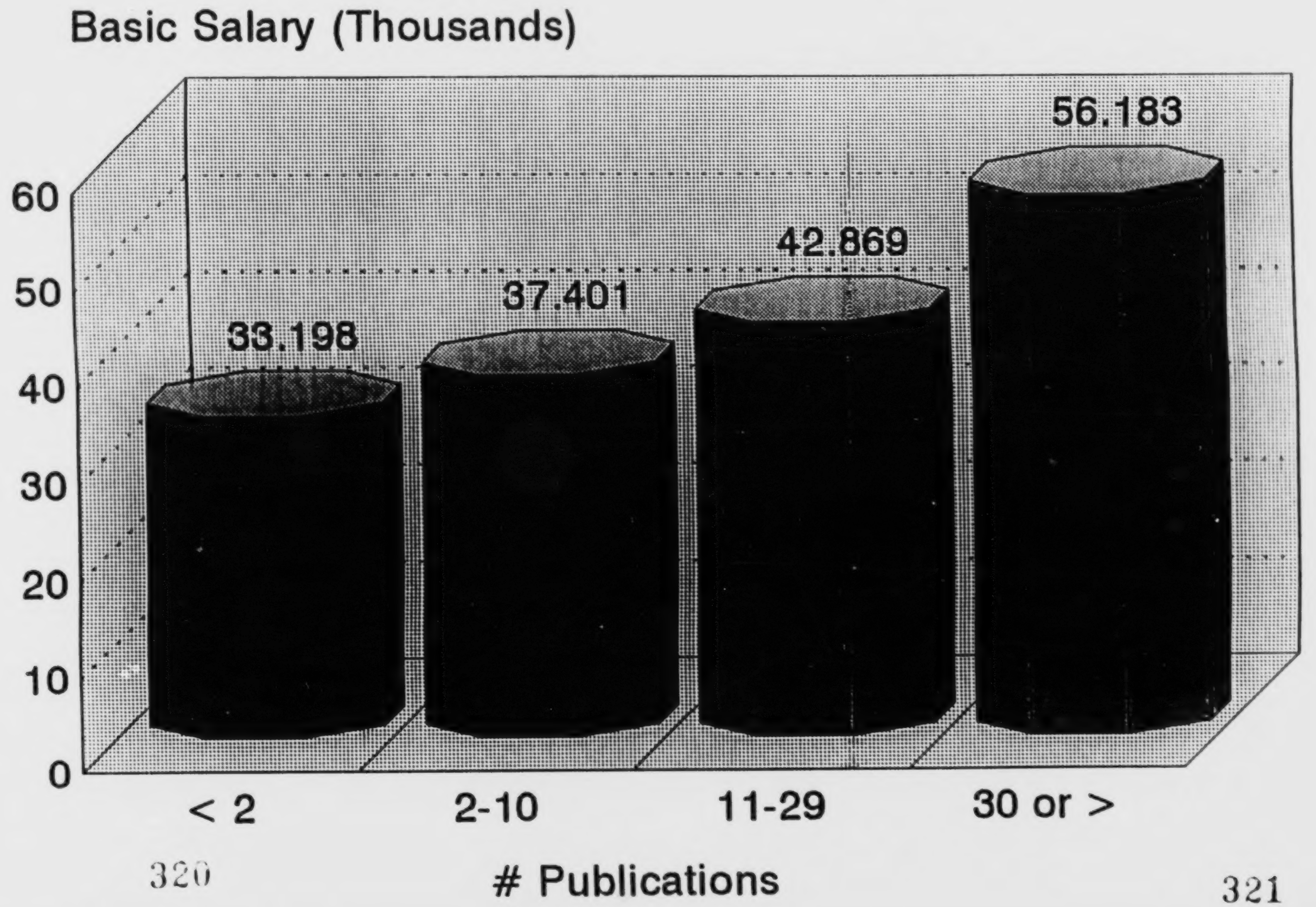
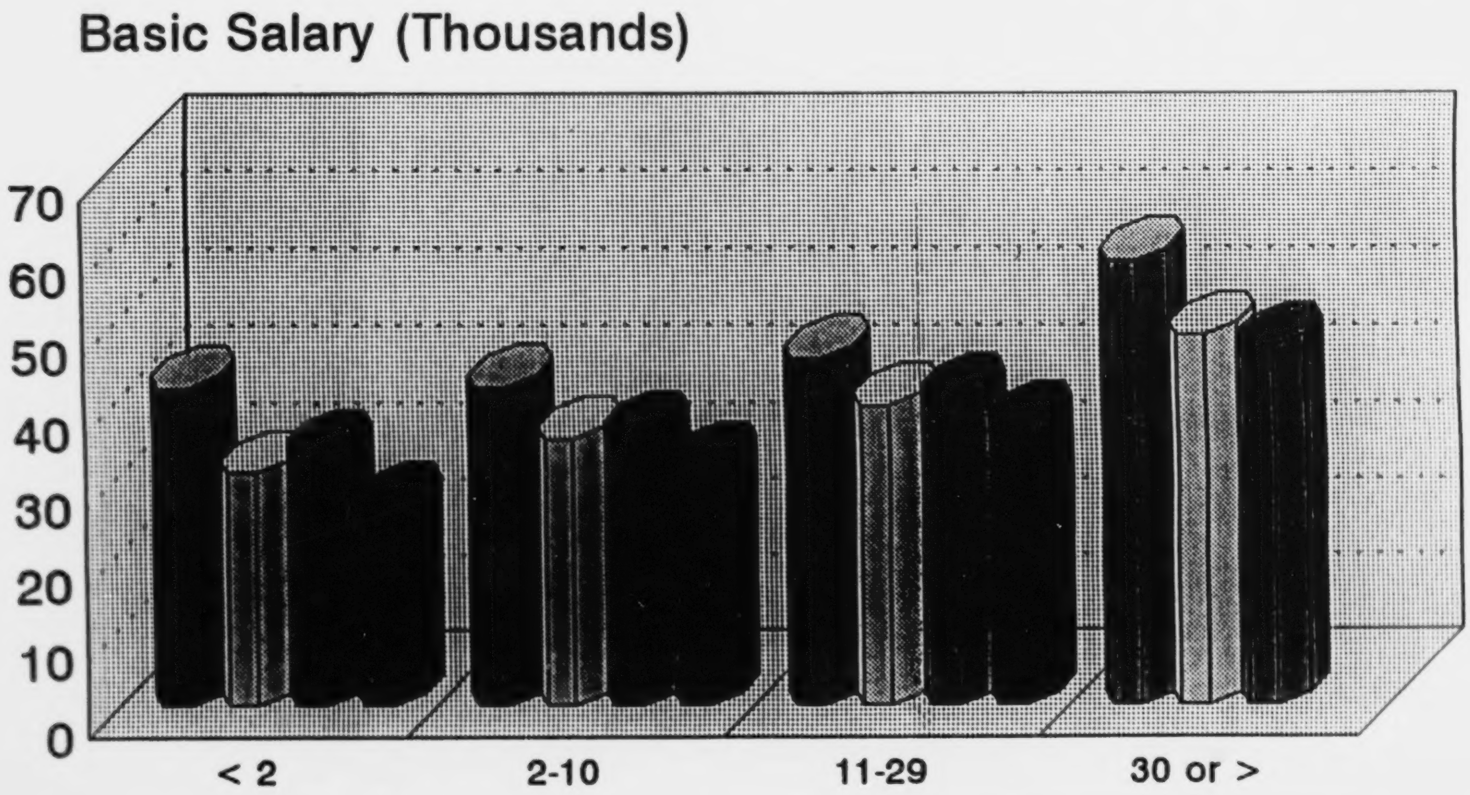


Table 1b

Number of Refereed Publications, Career

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



	< 2	2-10	11-29	30 or >
Research ■	41.676	41.783	45.519	58.082
Doctoral □	30.562	35.066	39.415	48.465
Comprehensive ▩	33.312	35.679	40.466	47.057
Liberal Arts ■	26.425	31.626	36.922	

# Publications

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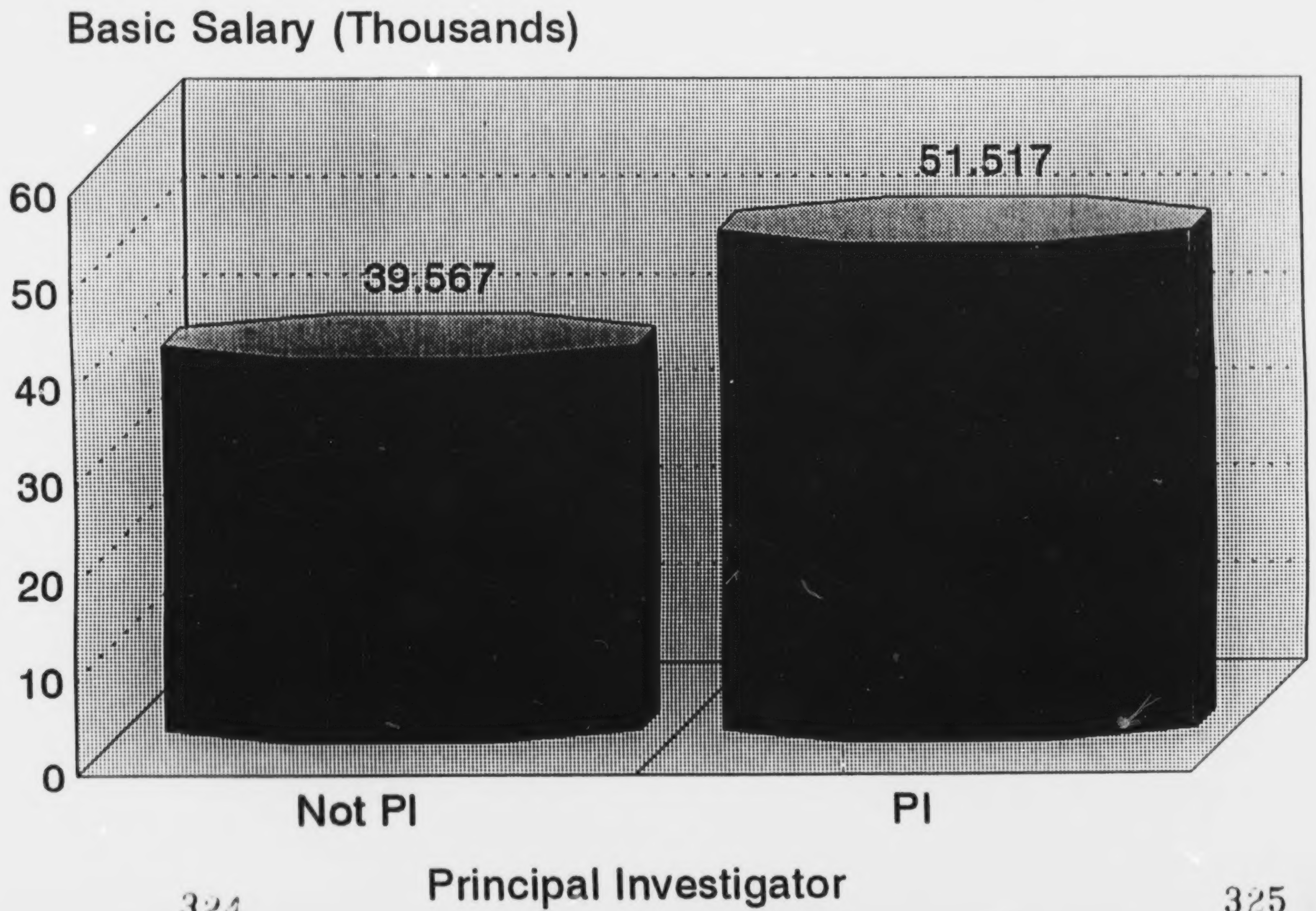
Table

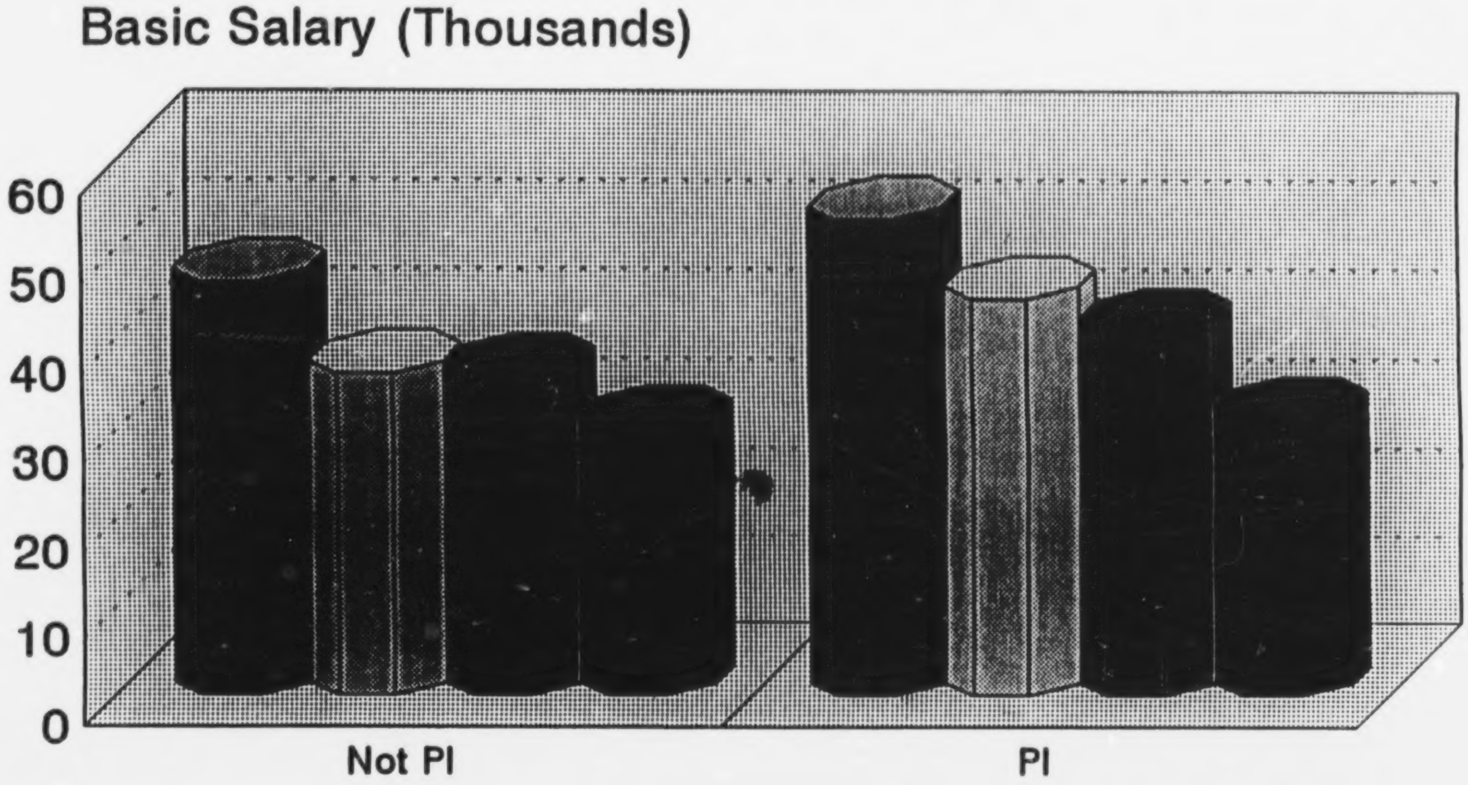
Principal Investigator, Funded Research

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Principal Investigator, Funded Research

Mean Income for Tenure-track, Full-time Faculty: Fall 1987

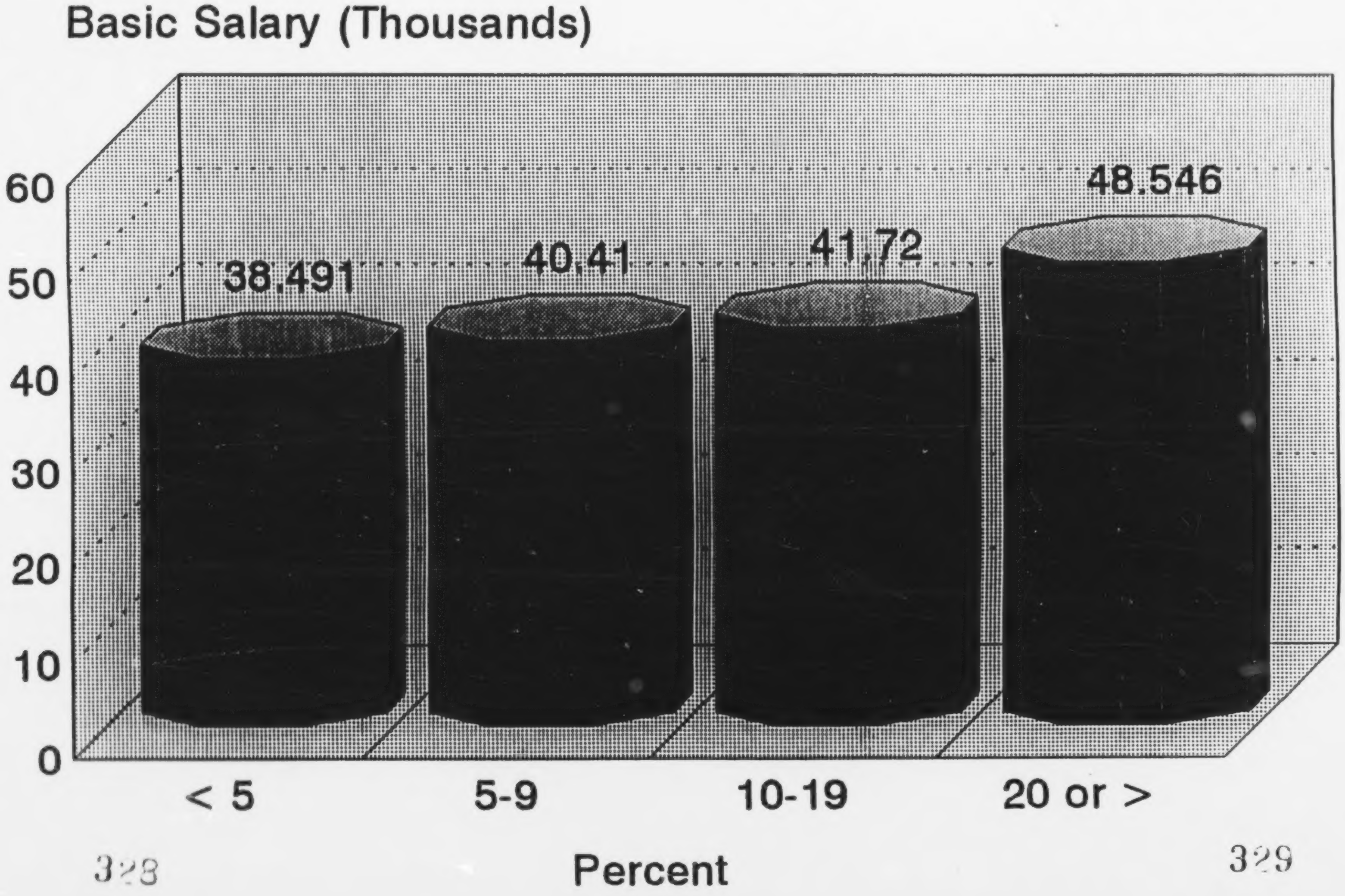


		Not PI	PI
Research	■	46.779	53.98
Doctoral	▨	36.585	44.973
Comprehensive	■	36.273	41.364
Liberal Arts	■	30.536	31.572

Principal Investigator

Percent of Time, Administration

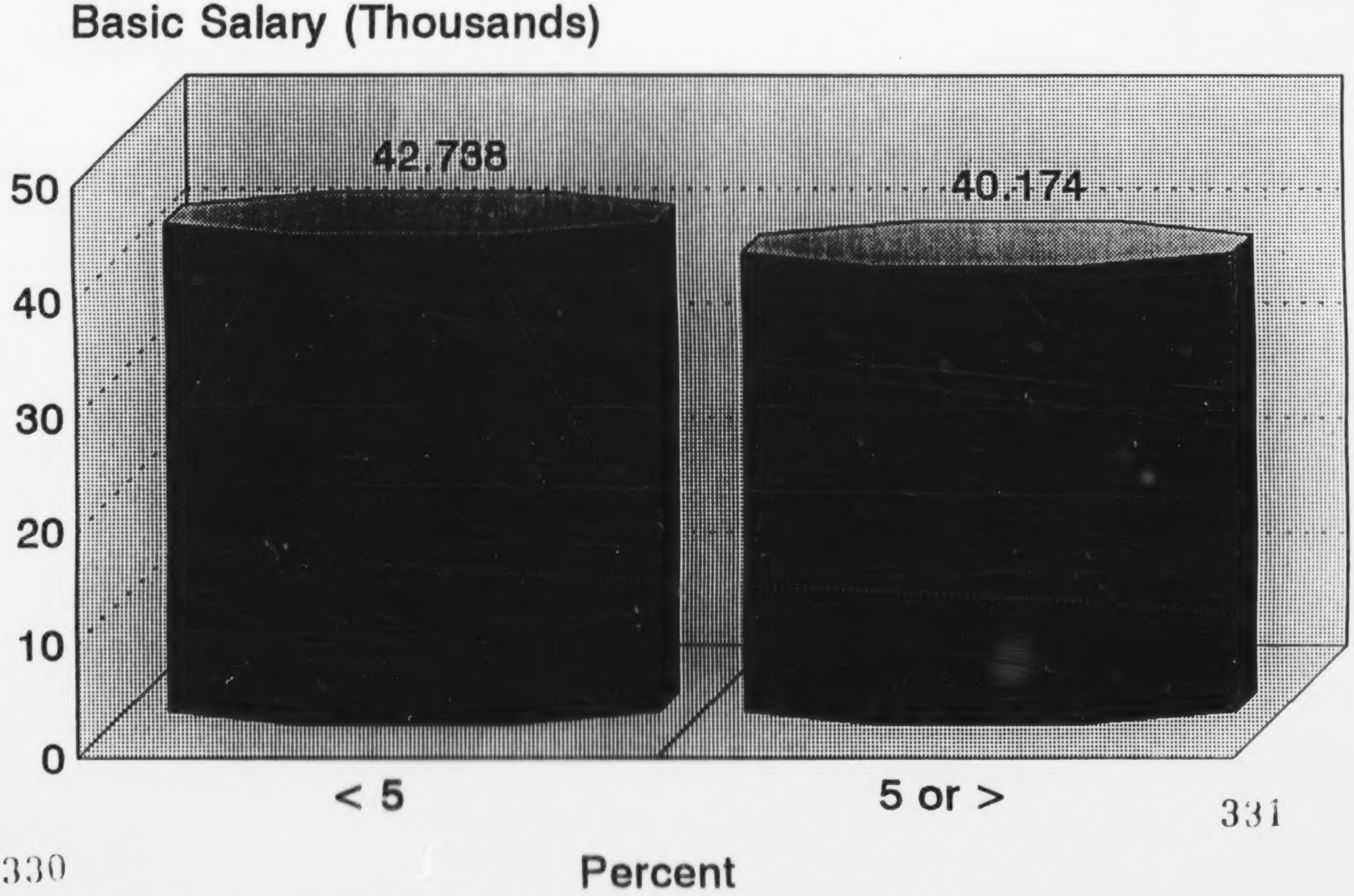
Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Table

Percent of Time, Public Service

Mean Income for Tenure-track, Full-time Faculty: Fall 1987



Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

% Time Teaching/Instruction	Basic Salary
All institutions	-0.42
Research	-0.32
Doctoral	-0.28
Comprehensive	-0.33
Liberal Arts	-0.06
Other 4-year	-0.44

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

# Hours Teaching Class/Week	Basic Salary
All Institutions	-0.07
Research	0.05
Doctoral	-0.11
Comprehensive	-0.07
Liberal Arts	-0.12
Other 4-year	-0.03

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

Student Contact Hours	Basic Salary
All Institutions	0.07
Research	0.05
Doctoral	-0.01
Comprehensive	0.05
Liberal Arts	0.07
Other 4-year	0.02

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

Taught only Undergrads	Basic Salary
All Institutions	0.04
Research	-0.01
Doctoral	0.08
Comprehensive	0.11
Liberal Arts	0.03
Other 4-year	-0.09

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

Taught only Grads	Basic Salary
All Institutions	0.31
Research	0.22
Doctoral	0.28
Comprehensive	0.36
Liberal Arts	---
Other 4-year	0.01

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

% Time on Research/Scholarship	Basic Salary
All Institutions	0.21
Research	0.03
Doctoral	0.21
Comprehensive	0.05
Liberal Arts	0.08
Other 4-year	0.10

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

# Refereed Publications, Career	Basic Salary
All Institutions	0.42
Research	0.38
Doctoral	0.36
Comprehensive	0.22
Liberal Arts	0.33
Other 4-year	0.37

Table 10 cont

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

PI on Research Project, Fall 1987	Basic Salary
All Institutions	0.28
Research	0.19
Doctoral	0.26
Comprehensive	0.10
Liberal Arts	0.01
Other 4-year	0.39

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

% Time, Administration	Basic Salary
All Institutions	0.21
Research	0.20
Doctoral	0.10
Comprehensive	0.34
Liberal Arts	0.08
Other 4-year	0.27

Correlations between Faculty Activities, Productivity, and Income

All Tenure-track, Full-time Faculty: Fall 1987

% Time on Service	Basic Salary
All Institutions	-0.06
Research	-0.03
Doctoral	0.03
Comprehensive	0.00
Liberal Arts	-0.07
Other 4-year	-0.18

Composite Variables

Composite	Indicator	Component Weight
Seniority	Time in Rank	0.88
	Age	0.85
	Years in Current Position	0.91
More Research/ Less Teaching	% Time, Teaching	-0.83
	% Time, Research	0.95

Multiple Regression for Basic Salary from Institution

Research Universities [R-square = .33; N (unweighted) = 1269]

Predictor	Standardized Beta	P
Publications (career)	0.27	0.0001
% Time, Administration	0.22	0.0001
Seniority	0.21	0.0001
Taught only Grads	0.18	0.0001
Hours Class/Week	0.14	0.0001
Male	0.11	0.0001
More Research/Less Teaching	0.10	0.0003
PI, Funded	0.08	0.002

Multiple Regression for Basic Salary from Institution

Doctoral Universities [R-square = .39; N (unweighted) = 711]

Predictor	Standardized Beta	P
Seniority	0.35	0.0001
Taught only Grads	0.24	0.0001
Publications (career)	0.15	0.0001
Male	0.15	0.0001
Highest Degree-Doctorate	0.14	0.0001
More Research/Less Teaching	0.13	0.0003
PI, Funded	0.13	0.0001
Hours Class/Week	0.10	0.006
Taught only Undergrads	0.08	0.03

Multiple Regression for Basic Salary from Institution

Comprehensive Universities [R-square = .43; N (unweighted) = 1491]

Predictor	Standardized Beta	P
Seniority	0.33	0.0001
Taught only Grads	0.28	0.0001
% Time, Administration	0.21	0.0001
Highest Degree-Doctorate	0.16	0.0001
Publications (career)	0.13	0.0001
Male	0.13	0.0001
More Research/Less Teaching	0.08	0.0004
Minority Faculty Member	0.06	0.001
Hours Class/Week	0.07	0.003

Multiple Regression for Basic Salary from Institution

Liberal Arts Colleges [R-square = .46; N (unweighted) = 367]

Predictor	Standardized Beta	P
Seniority	0.48	0.0001
More Research/Less Teaching	0.19	0.0001
Male	0.19	0.0001
Publications (career)	0.18	0.0001
Highest Degree-Doctorate	0.15	0.0002
Hours Class/Week	-0.13	0.01
% Time, Administration	0.12	0.01
Student Contact Hours	0.11	0.02
Minority Faculty Member	-0.09	0.03

Multiple Regression for Basic Salary from Institution

Other 4-year Institutions [R-square = .40; N (unweighted) = 115]

Predictor	Standardized Beta	P
% Time, Administration	0.30	0.0005
Taught only Grads	-0.26	0.009
Publications (career)	0.26	0.01
PI, Funded	0.25	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Agriculture/Home Economics [R-square = .58; N (unweighted) = 174]

Predictor	Standardized Beta	P
Seniority	0.31	0.0001
PI, Funded	0.29	0.0001
Male	0.25	0.0001
% Time, Administration	0.24	0.0001
Highest Degree-Doctorate	0.20	0.001
Publications (career)	0.14	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Business [R-square = .43; N (unweighted) = 167]

Predictor	Standardized Beta	P
Publications (career)	0.37	0.0001
Highest Degree-Doctorate	0.18	0.01
Hours Class/Week	-0.20	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Education [R-square = .54; N (unweighted) = 370]

Predictor	Standardized Beta	P
Seniority	0.47	0.0001
Publications (career)	0.31	0.0001
Male	0.15	0.001
Hours Class/Week	-0.14	0.004
Highest Degree-Doctorate	0.10	0.01
Student Contact Hours	0.10	0.02
% Time, Administration	0.09	0.02
Minority Faculty Member	0.07	0.05

Multiple Regression for Basic Salary from Institution by Program Area

Engineering [R-square = .44; N (unweighted) = 152]

Predictor	Standardized Beta	P
Seniority	0.30	0.0002
More Research/Less Teaching	0.28	0.002
Publications (career)	0.22	0.003
PI, Funded	0.18	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Fine Arts [R-square = .38; N (unweighted) = 279]

Predictor	Standardized Beta	P
Seniority	0.43	0.0001
Publications (career)	0.17	0.001
% Time, Administration	0.17	0.002
Minority Faculty Member	0.16	0.002
Highest Degree-Doctorate	0.15	0.007
Taught only Grads	0.13	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Health Sciences [R-square = .56; N (unweighted) = 219]

Predictor	Standardized Beta	P
Publications (career)	0.41	0.0001
Male	0.28	0.0001
Taught only Grads	0.24	0.0001
% Time, Administration	0.20	0.0001
Seniority	0.12	0.02

Multiple Regression for Basic Salary from Institution by Program Area

Humanities [R-square = .51; N (unweighted) = 1020]

Predictor	Standardized Beta	P
Seniority	0.47	0.0001
Hours in Class/Week	-0.18	0.0001
Publications (career)	0.15	0.0001
% Time, Administration	0.15	0.0001
Highest Degree-Doctorate	0.13	0.0001
Student Contact Hours	0.12	0.0001
% Time, Service	-0.11	0.0001
More Research/Less Teaching	0.10	0.0002
Taught only Grads	0.07	0.004
Male	0.07	0.006
PI, Funded	0.06	0.01

Multiple Regression for Basic Salary from Institution by Program Area

Natural Sciences [R-square = .48; N (unweighted) = 480]

Predictor	Standardized Beta	P
Publications (career)	0.32	0.0001
Seniority	0.31	0.0001
% Time, Administration	0.25	0.0001
PI, Funded	0.13	0.002
More Research/Less Teaching	0.13	0.006
Taught only Grads	0.09	0.03

Table 3

Multiple Regression for Basic Salary from Institution by Program Area

Social Sciences [R-square = .51; N (unweighted) = 680]

Predictor	Standardized Beta	P
Seniority	0.44	0.0001
Publications (career)	0.26	0.0001
% Time, Administration	0.17	0.0001
More Research/Less Teaching	0.12	0.0002
PI, Funded	0.09	0.001
Highest Degree-Doctorate	0.08	0.006
Hours Class/Week	-0.09	0.009
Male	0.06	0.05

Multiple Regression for Basic Salary from Institution by Program Area

Other Fields [R-square = .47; N (unweighted) = 294]

Predictor	Standardized Beta	P
Seniority	0.36	0.0001
Publications (career)	0.20	0.0001
More Research/Less Teaching	0.19	0.0008
Student Contact Hours	0.16	0.001
Hours Class/Week	-0.17	0.003
Taught only Grads	0.14	0.004
Highest Degree-Doctorate	0.13	0.007

Multiple Regression for Basic Salary by Academic Rank: Research Universities
Professor [R-square = .18; N (unweighted) = 611]

Predictor	Standardized Beta	P
Publications (career)	0.25	0.0001
% Time, Administration	0.22	0.0001
Taught only Grads	0.19	0.0001
Highest Degree-Doctorate	-0.08	0.04

Multiple Regression for Basic Salary by Academic Rank: Research Universities

Associate Professor [R-square = .37; N (unweighted) = 367]

Predictor	Standardized Beta	P
Hours Class/Week	0.43	0.0001
Publications (career)	0.32	0.0001
Taught only Grads	0.22	0.0001
More Research/Less Teaching	0.17	0.001
Highest Degree-Doctorate	0.12	0.007
Male	0.10	0.03

Multiple Regression for Basic Salary by Academic Rank: Research Universities

Assistant Professor [R-square = .24; N (unweighted) = 276]

Predictor	Standardized Beta	P
Publications (career)	0.25	0.0001
Taught only Grads	0.20	0.001
% Time, Administration	0.17	0.002
Male	0.14	0.01
Highest Degree-Doctorate	0.12	0.05
Minority Faculty Member	0.11	0.05

Table 37 cont.

Multiple Regression for Basic Salary by Academic Rank: Doctoral Universities
Professor [R-square = .21; N (unweighted) = 278]

Predictor	Standardized Beta	P
Taught only Grads	0.30	0.0001
Seniority	0.22	0.0002
PI, Funded	0.18	0.005
Publications (career)	0.12	0.05

Multiple Regression for Basic Salary by Academic Rank: Doctoral Universities

Associate Professor [R-square = .34; N (unweighted) = 244]

Predictor	Standardized Beta	P
Taught only Grads	0.38	0.0001
Hours Class/Week	0.28	0.0001
More Research/Less Teaching	0.21	0.003
Highest Degree-Doctorate	0.20	0.001
% Time, Administration	0.20	0.002
Male	0.19	0.001
Seniority	0.15	0.01

Multiple Regression for Basic Salary by Academic Rank: Doctoral Universities
Assistant Professor [R-square = .17; N (unweighted) = 174]

Predictor	Standardized Beta	P
Minority Faculty Member	0.17	0.03
Seniority	0.18	0.05

Table 38 con

Multiple Regression for Basic Salary by Academic Rank: Comprehensive Universities

Professor [R-square = .30; N (unweighted) = 638]

Predictor	Standardized Beta	P
Taught only Grads	0.22	0.0001
More Research/Less Teaching	0.22	0.0001
Seniority	0.18	0.0001
% Time, Administration	0.17	0.0001
% Time, Service	-0.15	0.0001
Publications (career)	0.14	0.0001
Hours in Class/Week	0.13	0.003
Highest Degree-Doctorate	0.08	0.03
Male	0.07	0.03

Table 39

Multiple Regression for Basic Salary by Academic Rank: Comprehensive Universities
Associate Professor [R-square = .21; N (unweighted) = 452]

Predictor	Standardized Beta	P
Seniority	0.23	0.0001
% Time, Administration	0.23	0.0001
Male	0.16	0.0002
Student Contact Hours	0.13	0.004
Hours Class/Week	-0.13	0.01
Taught only Undergrads	0.11	0.03
Minority Faculty Member	0.10	0.03
% Time, Service	0.09	0.04

Table 39 cont

Multiple Regression for Basic Salary by Academic Rank: Comprehensive Universities
Assistant Professor [R-square = .28; N (unweighted) = 358]

Predictor	Standardized Beta	P
Taught only Grads	0.45	0.0001
Seniority	0.21	0.0001
% Time, Administration	-0.14	0.01
More Research/Less Teaching	0.12	0.02
Male	0.11	0.02

Multiple Regression for Basic Salary by Academic Rank: Liberal Arts Colleges
Professor [R-square = .48; N (unweighted) = 146]

Predictor	Standardized Beta	P
Male	0.32	0.0001
Seniority	0.31	0.0001
More Research/Less Teaching	0.28	0.0004
Taught only Undergrads	-0.28	0.0007
Publications (career)	0.25	0.001
Highest Degree-Doctorate	0.20	0.007
% Time, Service	-0.17	0.02

Table 40

Multiple Regression for Basic Salary by Academic Rank: Liberal Arts Colleges

Associate Professor [R-square = .47; N (unweighted) = 109]

Predictor	Standardized Beta	P
Hours in Class/Week	-0.35	0.002
Male	0.26	0.002
More Research/Less Teaching	0.26	0.009
% Time, Administration	0.25	0.03

Multiple Regression for Basic Salary by Academic Rank: Liberal Arts Colleges

Assistant Professor [R-square = .36; N (unweighted) = 103]

Predictor	Standardized Beta	P.
Hours Class/Week	-0.41	0.008
Student Contact Hours	0.39	0.005
Publications (career)	0.38	0.003
Minority Faculty Member	-0.34	0.001
Seniority	0.24	0.02